

CALIFORNIA ENERGY RESOURCES CONSERVATION  
AND DEVELOPMENT COMMISSION  
ENERGY EFFICIENCY COMMITTEE

PUBLIC WORKSHOP  
ON THE AB 549 PROJECT

CALIFORNIA ENERGY COMMISSION  
HEARING ROOM A  
1516 NINTH STREET  
SACRAMENTO, CALIFORNIA

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Alan Meade

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A P P E A R A N C E S

COMMITTEE MEMBERS PRESENT

Robert Pernell, Commissioner

John Geesman, Commissioner

STAFF PRESENT

Bruce Cenicerros, Residential Buildings and  
Appliances Office

Randel R. Riedel, Residential Building and  
Appliances Office

Elaine Casilla, AB 549 Team

Jim Holland, CEC Appliance Program

Dottie Corrigan

Betty Crisman, Appliance Program

Elaine Hebert, Residential Buildings and  
Appliances Office

Charles Smith

Kae Lewis, Energy Efficiency Division

Clint Wool

Earline Geisler

Al Garcia

Brian Elkhorn

Michael Martin

Michael Messenger, Energy Services Assessment

A P P E A R A N C E S, continued

ALSO PRESENT

Lynn Benningfield, Heschong Mahone Group

Cynthia Austin, Heschong Mahone Group

Doug Mahone, Heschong Mahone Group

Tony Pierce, Southern California Edison

Pat Eilert, Pacific Gas & Electric

Lisa Fabula, San Diego Gas & Electric

Len Bardsley, Southern California Gas Company

Vincent Sehweide, CFM Equipment Distributors

Randy Angeloni, Sacramento County Energy Program

Dale Gustavson, Air Conditioning Contractors of

America

John Hogan, City of Seattle

Mike Hodgson, California Building Industries

Association

Eric Borsting, National Association of

Homebuilders

Douglas Beaman, Douglas Beaman Associates

Dawn Carton, CHEERS

Norma Cox, San Diego Gas & Electric

David Reynolds, Aspen Systems

Dave Peterson, Rated Energy Plus

Charles Segerstrom, PG&E

Thomas P. Conlon, GeoPraxis

A P P E A R A N C E S (continued)

ALSO PRESENT (continued)

John Proctor, Proctor Engineering Group

Devra Bachrach, Natural Resources Defense Council

Jim Flanagan, Quantum Energy Services

David Casentini, D&R International

Michael S. Day, Rockwood Consulting

Patrick Florson, Roseville Electric

Nancy Jenkins, PEER Buildings Program

Paul Dudley, Bristol Light Industries

Don Allmon, PEER Buildings Program

Robert L. Knight, Bevilacqua Knight, Inc.

David J. Robinson, Renaissance Weatherization

David W. Ware, Owens Corning

Steade R. Craigo, Department of Parks and

Recreation

J. Patrick Quinn, Quality Assured Principal Group

Ed Gray, MEMA (via phone)

John McCaffrey, Architect

## I N D E X

	Page
Opening Comments, Commissioner Pernell	1
Proceedings	2
Introductions	5
Project Purpose	9
Codes and Standards Enhancement Project -- AB 549, the IOU CASE project	25
Segmentation and Savings Potential in the Existing Buildings Market	
-- Residential	30
-- Non-residential	105
What strategies might be effective at capturing energy savings in existing buildings?	153
Summary and next steps	205
Adjournment	207
Reporter's Certificate	208

1 P R O C E E D I N G S

2 COMMISSIONER PERNELL: Good morning. My  
3 name is Commissioner Pernell. I want to thank  
4 everyone for coming and welcome you. This is the  
5 first of several workshops that the Commission  
6 will be conducting in relationship to AB 549.

7 We want to get your input and ideas on  
8 how we can reduce energy on peak and existing  
9 buildings. And as we have done in the past, we  
10 want to make sure that all of the stakeholders and  
11 anyone else who has any information and ideas to  
12 share those with us.

13 We've already targeted numerous options  
14 on existing buildings, but there are additional  
15 potential. We want to hear from you and explore  
16 some of those potentials.

17 The Commission views this as a very  
18 important project. We have analysis that shows  
19 that existing buildings have opportunities for  
20 savings, and we want to be able to take advantage  
21 of those opportunities.

22 We're also looking at some new standards  
23 in existing buildings. So rather than you hearing  
24 from me, what I'd like to do is turn this workshop  
25 over to Bruce. And Bruce will go around and

1 perhaps we can introduce at least everybody around  
2 the table.

3 MR. CENICEROS: Welcome, everybody. My  
4 name is Bruce Cenicerros. I'm the Project Manager  
5 for the AB 549 project, looking at peak energy  
6 consumption in existing buildings in California.  
7 Thank you all for coming today.

8 I want to let you know about a few  
9 logistics right off the bat here before we get  
10 started. First of all, this meeting is being  
11 recorded. We have a Reporter, Alan, sitting in  
12 the corner there.

13 He's going to need to pick up any  
14 comments that you have in order for us to make it  
15 into the transcription, which we really need to  
16 have. So we have two sets of microphones around  
17 here, which seems a little redundant, but that's  
18 the only way we can do it for these purposes.

19 But you need only to worry about being  
20 near one of these round mikes, and speaking  
21 directly into one of these long, directional mikes  
22 here. So those of you sitting at the table, you  
23 need to pull the mike to you when you do talk.

24 And those of you sitting in the back  
25 seats here, you'll need to come up to the podium.

1 I apologize for the inconvenience, but it's the  
2 only way we can get you on both mikes -- and then  
3 speak into both mikes.

4 For Alan's sake, please state your name  
5 before you speak every time. And the first time,  
6 please state your name and your organization's  
7 name. I'd really appreciate that. If you don't  
8 do that he's going to have to chase you down and  
9 get a business card and all that, and we probably  
10 don't want that to happen, so please help us out.

11 The restrooms are right out this door in  
12 the back corner. And we have a snack bar up the  
13 stairs, just at the top of the stairs there, where  
14 you can get lunch or snacks or drinks.

15 We are also broadcasting this workshop  
16 on our website for those who are unable to attend  
17 and just want the audio portion of the workshop.  
18 Plus we are also allowing people to dial in via  
19 conference call. And that's wired in to the room  
20 audio. So for them to hear you, again, you need  
21 to speak into the long, skinny directional mikes.  
22 We'd really appreciate that.

23 So we'll have at least a lunch break and  
24 an afternoon break. And if people are wearing out  
25 in the morning sessions -- since we are going to



1 12:30 -- wave your arms and we can have a little  
2 break in the morning session too. But hopefully  
3 we can carry on into the lunch hour, which will  
4 begin at 12:30.

5 And there are lots of restaurants  
6 around, if you want to get a recommendation ask me  
7 or Randel or anyone else who are on the CEC staff,  
8 and we can give you some recommendations. Or you  
9 can go up to the snack bar for that.

10 So I'm going to give you just a brief  
11 introduction into the AB 549 project, so you  
12 understand why we're doing this, and essentially  
13 where this fits in to all the numerous activities  
14 that Commissioner Pernell mentioned that have been  
15 going on for several decades here in California  
16 and throughout the country.

17 Actually, Randel will start this off  
18 with a section on purpose, and I'll take it back  
19 from there.

20 MR. RIEDEL: Thank you.

21 COMMISSIONER PERNELL: Randel, can I  
22 interrupt you?

23 MR. RIEDEL: Yes.

24 COMMISSIONER PERNELL: I'm not familiar  
25 with everybody around the table. So to help me,

1 if we could just go around and introduce ourselves  
2 and the organization?

3 MR. RIEDEL: Fine. Lynn, can we start  
4 with you please?

5 MS. BENNINGFIELD: I'm Lynn Benningfield  
6 with the Heschong Mahone Group. And we're the  
7 consultants to Southern California Edison and the  
8 IOU Codes and Standards Team.

9 MS. AUSTIN: My name is Cynthia Austin,  
10 and I'm also with the Heschong Mahone Group.

11 MR. MAHONE: I'm Doug Mahone, I'm with  
12 the Heschong Mahone Group.

13 MR. PIERCE: I'm Tony Pierce with  
14 Southern California Edison.

15 MR. EILERT: I'm Pat Eilert with PG&E.

16 MS. FABULA: Lisa Fabula with San Diego  
17 Gas & Electric.

18 MR. BARDSLEY: Len Bardsley, Southern  
19 California Gas Company.

20 MR. SEHWEDDE: Vincent Sehweide with CFM  
21 Equipment Distributors.

22 MR. ANGELONI: I'm Randy Angeloni with  
23 Sacramento County Energy Program.

24 MR. GUSTAVSON: Dale Gustavson with the  
25 Air Conditioning Contractors of America.

1 MR. HOGAN: John Hogan, City of Seattle.

2 MR. HODGSON: Mike Hodgson representing  
3 the California Building Industry Association.

4 MR. BORSTING: Eric Borsting, National  
5 Association of Homebuilders, energy Chair.

6 MR. BEAMAN: Douglas Beaman, private  
7 consultant. I'm also the trainer for the CHEERS  
8 new construction. And some of you -- if there's  
9 training that would be involved with CHEERS,  
10 that's why I'm here.

11 MS. CARTON: I'm Dawn Carton with  
12 CHEERS.

13 MR. CENICEROS: Okay. I think this is  
14 very possible. Why don't we go around the outside  
15 and if people could quickly come up and introduce  
16 themselves, starting on this side over here?

17 MS. CASILLA: I'm Elaine Casilla, I'm  
18 with the CEC AB 549 team.

19 MS. COX: Norma Cox, San Diego Gas &  
20 Electric.

21 MR. HOLLAND: Jim Holland, Appliance  
22 Program with the CEC.

23 MR. REYNOLDS: David Reynolds with Aspen  
24 Systems.

25 COMMISSIONER GEESMAN: John Geesman with

1 the California Energy Commission.

2 MR. PETERSON: Dave Peterson, Rated  
3 Energy Plus.

4 MR. SEGERSTROM: Charles Segerstrom,  
5 PG&E.

6 MR. CONLON: Tom Conlon, Energy Checkup  
7 and Services, GeoPraxis.

8 MR. PROCTOR: John Proctor, Proctor  
9 Engineering Group.

10 MS. BACHRACH: Devra Bachrach, Natural  
11 Resources Defense Council.

12 MS. CORRIGAN: Dottie Corrigan, CEC.

13 MS. CRISMAN: Betty Crisman, Appliance  
14 Program, Energy Commission.

15 MR. FLANAGAN: Jim Flanagan, Quantum  
16 Energy Services.

17 MR. CASENTINI: Dave Casentini, D&R  
18 International, representing EPA's Energy Start for  
19 buildings.

20 MR. DAY: Michael Day with Rockwood  
21 Consulting.

22 MS. HEBERT: Elaine Hebert with the  
23 Energy Commission.

24 MR. SMITH: Charles Smith, CEC.

25 MS. LEWIS: Kae Lewis, CEC.

1 MR. WOOL: Clint Wool, I'm with the CEC.

2 MS. GEISLER: Earline Geisler, Energy  
3 Commission.

4 MR. FLORSON: Patrick Florson, Roseville  
5 Electric.

6 MR. GARCIA: Al Garcia, Energy  
7 Commission.

8 MR. ELKHORN: Brian Elkhorn, Energy  
9 Commission.

10 MS. JENKINS: Nancy Jenkins, PIER  
11 Buildings Program.

12 MR. DUDLEY: Paul Dudley, Bristol Light  
13 Industries.

14 MR. MARTIN: Michael Martin, California  
15 Energy Commission.

16 MR. ALLMON: Don Allmon, PIER Buildings  
17 Program.

18 COMMISSIONER PERNELL: Okay. Thank you  
19 all. Again, I appreciate, on behalf of the  
20 Commission and the Commissioners, I want to  
21 welcome you all to the Commission. I look forward  
22 to a very productive workshop today. So with  
23 that, thank you again, and Bruce.

24 MR. CENICEROS: I also want to see if  
25 anyone is as yet on the telephone line? go ahead

1 and speak up if you are?

2 MR. GRAY: Here's Ed Gray from the  
3 National Electrical Manufacturer's Association.

4 MR. CENICEROS: Welcome, Ed. Anybody  
5 else? Okay, well, they'll probably be joining us  
6 as we go. So Randel, I'll kick it back to you  
7 now.

8 MR. RIEDEL: Great, Bruce, thank you  
9 very much. It's really a pleasure to be  
10 sitting -- standing, I'll be sitting soon -- here  
11 to give you a presentation on the project purpose.

12 This is a activity and a direction that  
13 I've been a very strong advocate of probably my  
14 whole tenure here at the Energy Commission, and  
15 I'm really delighted that the bill was carried  
16 forward for us to go in this particular direction,  
17 or at least to do this as a report to the  
18 legislature.

19 That is the purpose of this particular  
20 activity. The project is to prepare a report to  
21 recommend a set of integrated strategies to reduce  
22 peak and overall energy use in existing  
23 residential and non-residential buildings in  
24 California.

25 Out of our project charter we developed

1 a project vision. And the vision captures where  
2 we want to be down the road. It's stated as the  
3 most reasonable, cost-effective energy efficiency  
4 improvements have been made in existing buildings.

5 And that buildings are operated in that  
6 energy efficient and peak conscious manner, which  
7 contributes to a more resilient energy supply and  
8 delivery systems. And that California homes and  
9 workplaces have a reputation for being affordable,  
10 safe, comfortable, and healthy places in which to  
11 live and work.

12 The project objectives are to reduce  
13 wasteful energy usage for existing residential and  
14 non-residential buildings during peak hours. To  
15 contribute to a more stable California electric  
16 grid, and more stable market prices.

17 To reduce the gap in energy efficiency  
18 levels between new buildings and older buildings  
19 in terms of both building features and the way  
20 they are operated. Occupants of improved  
21 buildings report lower operating costs, improved  
22 comfort and better indoor air quality and  
23 durability of buildings.

24 Further on the objectives is to send an  
25 action plan to the legislature by October 1, 2005.

1 If legislation is required, then to obtain support  
2 for the legislation from an appropriate author,  
3 and to help provide draft bill language.

4 If the legislature adopts our  
5 recommendations and then, within two years, the  
6 governor signs legislation, if required, directing  
7 the CEC and other parties to implement the  
8 recommendations and provide the required resources  
9 to do so.

10 And within two years of adoption the  
11 legislation of California's energy and peak  
12 electricity supply needs are reduced compared to  
13 levels that exist without the project.

14 The objectives of the report is to  
15 document current conditions, to define what is now  
16 normal in these markets. To characterize how  
17 energy improvements are made, such as when they  
18 are likely to occur, the market actors that might  
19 be involved in these transactions, constraints to  
20 making further improvements, possible  
21 opportunities for influence, and how building  
22 systems are operated.

23 Further we wish to identify the market  
24 drivers for energy efficiency improvements in  
25 which to develop, discuss, analyze, a list of



1 alternative strategies to reduce peak, and to  
2 develop an estimate of energy savings and demand  
3 reduction that will recur as a result of  
4 implementing these particular plans and  
5 recommendations.

6 A very important part of this is the  
7 objective of the public process, and that is to  
8 conduct an open and participatory type of process,  
9 solicit information and ideas and suggestions --  
10 just as we're doing here today -- from a diverse  
11 set of market actors and stakeholders. And also  
12 to test the viability of potential measures and  
13 strategies with those who will be impacted by  
14 them.

15 With that, I'd like to turn it over to  
16 Bruce, who will go a little bit further in regards  
17 to what we're seeking to do. Thank you very much.

18 MR. CENICEROS: Thank you, Randel. So,  
19 again, there are a lot of activities going on now  
20 that have been going on for a couple of decades  
21 now in California that have been addressing very  
22 effectively existing buildings. These are just  
23 some of them, there are more out there.

24 But the main ones are the PGC efficiency  
25 programs that are being administered by the

1 electric utilities and gas utilities in  
2 California.

3           There are also a large number of third  
4 party and local programs that are relatively new  
5 in the last couple of years now that are testing  
6 some rather innovative concepts. Many of the  
7 program administrators are here in the room today  
8 that target existing buildings.

9           And then we have the Title 24 Appliance  
10 Efficiency Standards, Building Efficiency  
11 Standards, we have the Public Interest Energy  
12 Research Program or PIER, which is the source for  
13 developing new ideas, new technologies, research  
14 and development.

15           We have federal climate standards and  
16 some federal marketing programs such as Energy  
17 Star, Home Energy Rating System, and a lot of  
18 private efforts out there, people who are doing  
19 things without any help from incentive programs or  
20 government programs.

21           They're just out there learning a way to  
22 make a living out of applying energy efficiency  
23 projects and services out there. I want to give  
24 them credit as well.

25           Just to give you a sense here -- I'm not

1 going to go down these lists here -- of what's  
2 covered by some of those main items I just  
3 mentioned. The federal appliance standards covers  
4 more appliances, electrical devices, now gas  
5 devices than in history.

6 And as those have ramped up the  
7 California appliance standards have targeted more  
8 and more the small niches that are left that the  
9 federal standards don't cover.

10 The Title 24 Building Efficiency  
11 Standards have evolved significantly over the  
12 years since they began in the late 70's and early  
13 80's. And as far as existing buildings -- those  
14 are targeted primarily at new buildings -- but  
15 where it affects existing buildings is where you  
16 have an addition or remodel that's significant.

17 It can trigger Title 24 compliance, and  
18 there are three basic ways that a building owner  
19 can comply. The first way is to just make the new  
20 part of the building -- the new square footage or  
21 the new equipment that is going into the existing  
22 square footage -- comply with current  
23 requirements.

24 The second way is to ensure that there  
25 is no new increase in consumption -- basically you

1 can trade off higher energy cost in the new parts  
2 of the building by making additional improvements  
3 in the pre-existing equipment per square footage.

4 And the third way is if it's simple and  
5 you have a relatively new building, it might be  
6 easiest just to bring the whole building into  
7 compliance, as if it were a new building.

8 There's been a lot of confusion about  
9 how that affects existing buildings, but I tried  
10 to clarify it a little bit there. But what it  
11 doesn't do though is, the smaller the residential  
12 addition the softer the requirements. And most  
13 residential remodels -- well, maybe not most --  
14 but a lot of remodels don't trigger the standards  
15 in residential, and probably some in non-  
16 residential too.

17 And this last bullet here -- I should  
18 probably correct that to say that there are some  
19 requirements for performance verification like  
20 duct testing or commissioning of equipment in  
21 commercial buildings -- that are triggered by  
22 Title 24 for existing buildings, additions and  
23 remodels.

24 There are a whole lot of efforts here  
25 with the public goods charge. Energy efficiency

1 programs, the non-regulatory side of things, and  
2 those are making a big difference now, more than  
3 ever. They're becoming more and more focused,  
4 these programs, and are better refined.

5 And here's some of the ones for non-  
6 residential. These are in your slides, so I'm not  
7 going to over these. And then the other related  
8 activities that I mentioned before. I should  
9 point out, too, we don't know what's going to  
10 happen here with the changes to the electricity  
11 market.

12 This project is going to try and be  
13 flexible, and be ready for whatever happens.  
14 Whatever bills are passed to re-regulate or  
15 regulate in a different manner the electricity  
16 markets on the wholesale and retail level. And  
17 also the allotted changes in rate tariffs.

18 Hopefully, some demand responsive  
19 options that will be available to encourage people  
20 to reduce peak demand. We'll be watching that  
21 proceeding very closely and coordinating with that  
22 proceeding as well as the PIER program and all the  
23 other programs.

24 So how does AB 549 fit in with all this?  
25 Basically, all of those existing efforts do a

1 pretty good job of covering a lot of what needs to  
2 be done in existing buildings, yet we still see  
3 that there is significant potential, as evidenced  
4 by Xenergy's recent study on non-residential  
5 buildings and commercial buildings.

6           There's a lot of potential out there.  
7 And if we put more resources into these programs  
8 we could get a lot of more cost-effective savings.  
9 And we've heard a lot of examples from people of  
10 situations that aren't currently covered very well  
11 by any of these areas here.

12           So what we want to do with AB 549,  
13 basically, is focus in on some of the crossover  
14 areas here, the borders between these different  
15 efforts. Make sure that they are coordinating  
16 well, that certain important things aren't being  
17 left out, and also look at kind of the areas that  
18 don't have any coverage at all right now.

19           Those could be right in the midst of it  
20 all, or more out on the fringe, areas that we  
21 really haven't gotten into yet. So we'll look at  
22 those too. And hopefully AB 549 will result in  
23 some recommendations on how to better coordinate  
24 and also some recommendations on maybe some new  
25 regulatory mechanisms or standards and new market

1 programs.

2           We would look definitely at who would be  
3 best positioned to do those new efforts. Maybe  
4 they'd fit into existing efforts. We might just  
5 expand something like the appliance standards to  
6 get into some new kinds of building components,  
7 not just things you plug into the wall but maybe  
8 these building materials.

9           Or we might recommend that the PUC and  
10 the utility programs address a new area that they  
11 haven't before. It's hard to say what it's going  
12 to be, but what I want to say is what we won't be  
13 doing is a wholesale evaluation of any of these  
14 existing efforts. We're going to be looking at  
15 what's not being covered right now.

16           We'll look more from the evidence, the  
17 symptoms we see in the markets out there as far as  
18 well, here's a need that's not being addressed, or  
19 here's something that should be done and no one  
20 seems to be doing it. And use that as a symptom  
21 to try and track down who's not covering it and  
22 why.

23           So I hope that helps people understand  
24 how we'll be doing this project and what it will  
25 and won't do.

1           Now I'll talk a little bit about project  
2   roles here, because -- due to kind of the  
3   circumstances of our acquiring resources for this  
4   project -- we're actually starting the mandatory  
5   strategies portion of it kind of a little bit  
6   ahead of the voluntary measures.

7           And the reason is that when the bill was  
8   passed all the resources were struck from the  
9   bill, yet they still wanted us to do the report  
10   anyway. And we -- in this time of very  
11   constrained budgets and very short staff, we have  
12   a hiring freeze on right now -- could not commit  
13   to really beginning this project until we had some  
14   additional resources lined up.

15          And thankfully the investor-owned  
16   utility team here for Codes and Standards stepped  
17   up to the plate and identified some funds that  
18   they could use to begin some work here, but it had  
19   to be related to codes and standards work. So  
20   that's why we're starting with that portion there.

21          A portion of what we'll be doing is a  
22   pretty extensive characterization of the market.  
23   That's not necessarily new work, there's a lot of  
24   work out there. We're just having the Hescong  
25   Mahone Group contracted to utilities pull that



1 work together for us.

2 And then we'll use that effort, that  
3 base there, to look up both mandatory strategies,  
4 which HMG will also continue to do for us, and  
5 then through another method we'll look at the  
6 market based strategies. And that will all feed  
7 into developing our policy options and then going  
8 through reports to the legislature.

9 We need your input, everyone here and  
10 people who are listening and hopefully a lot of  
11 additional people, who will be participating in  
12 this process over the next few years to make sure  
13 we're not missing anything important, and that we  
14 have the right balance between regulatory options  
15 and voluntary or incentive-based options.

16 Because sometimes it makes a lot more  
17 sense and can be done in a less costly manner to  
18 do things with a voluntary kind of approach.

19 Just a little bit about the project  
20 schedule here. I almost feel I have to apologize  
21 for this, because the time frame seems awfully  
22 long. And the reason is this is the worst-case  
23 scenario.

24 This assumes that we will get no more  
25 new resources, that we'll have layoffs at the

1 state level, and that we'll have to do all the  
2 additional work that the Heschong Mahone Group  
3 will not be doing for us in-house. And that  
4 everything that can go wrong will go wrong.

5 What we hope will happen will be  
6 something that's maybe a year shorter than this  
7 time frame, if we do get additional resources.  
8 But we'll be planning workshops here, the public  
9 input part, something in the fall here to respond  
10 to HMG's report on regulatory strategies and  
11 recommendations.

12 And then another one here when we  
13 develop our options for voluntary strategies. And  
14 then of course there will be a draft report that  
15 will happen at some point in time, nearly into  
16 that blue band, and we'll go from there.

17 So hopefully we'll be able to tighten  
18 the schedule up by a full year if we're able to  
19 get additional resources on the project.

20 So that's all I have to say about the  
21 project. Are there any questions about it before  
22 I move on? We'll have a section at the end of the  
23 day for general comments about how we're going  
24 about this project, but for right now are there  
25 any questions about what we're doing, why, and

1     how?

2                 Yes, could you step up to the podium,  
3     please, and state your name?

4                 MR. WARE:  I'm Dave Ware with Owens  
5     Corning.  When this bill was passed there was  
6     somewhat of a companion bill by Lowenthal, AB  
7     1574, that also directed the Commission to take a  
8     look at existing building efficiency measures.

9                 Is 1574 being included in this bill, or  
10    is there a separate activity for that?

11                MR. CENICEROS:  Is there a CEC staff  
12    person in the meeting who's familiar with 1574 who  
13    can answer that?  Robert, do you want to say  
14    something?

15                COMMISSIONER PERNELL:  Just a question  
16    on it.  Did 574 ask for a report to the  
17    legislature or --?

18                MR. WARE:  I'm not sure of that.  It  
19    does direct the Commission -- actually, I have it  
20    here and I can provide that copy to you -- I'm  
21    not, I'll have to look at it, it's only a three-  
22    page bill similar to this bill.

23                But it does talk specifically about the  
24    Energy Commission, directing the Energy Commission  
25    to develop and look at and investigate energy

1 efficiency measures for existing buildings.

2 It looked primarily at the home  
3 inspection group, and providing them direction to  
4 include, at the point of sale, providing them  
5 direction to include energy efficiency measures  
6 and their home inspection process for sale of  
7 buildings.

8 But it also included a section directing  
9 the Energy Commission to do similar things. So I  
10 was curious whether they were bringing those two  
11 bills together.

12 COMMISSIONER PERNELL: All right. We  
13 will find out before the end of today.

14 MR. CENICEROS: Thank you for that  
15 question, Dave, and explaining the bill. I can  
16 never remember what all these bill numbers relate  
17 to, but yes, that is one bill that we will be  
18 coordinating our work on AB 549 with.

19 It will have a separate, more focused  
20 work product involved, but it is kind of within  
21 the full scope here of addressing existing  
22 buildings, so we will be looking at that, although  
23 the timing will be a little bit offset.

24 Any questions that do come up in the  
25 workshop that we can't give a really complete

1 answer to we will post on our website for AB 549  
2 the responses to those questions later. So, if  
3 you're not satisfied with the response you get  
4 right now let us know and we'll put something up  
5 there for you. Yes, Mike?

6 MR. HODGSON: Bruce, just kind of a  
7 general question. Is the CEC also going to  
8 coordinate this project schedule with the SEER's  
9 schedule for retrofit? Are they going to  
10 reinstitute those workshops and get that process  
11 going in coordination with this?

12 MR. CENICEROS: Are you talking about  
13 the -- what is it, nine or ten year old statute?

14 MR. HODGSON: Ratings scale.

15 MR. CENICEROS: Yes. I am not able to  
16 give you an answer in terms of whether that  
17 project will be restarted by AB 549 or folded into  
18 the scope of AB 549. We haven't yet resolved that  
19 issue, but again staff constraints there. At a  
20 minimum I hope that we can at least address the  
21 issues involved there and make sure there is a  
22 pathway to getting that work done.

23 That's one of the primary things I see  
24 the AB 549 report to the legislature being able to  
25 do, is to say "here's an action plan. Here are

1 the things that need to happen to address some of  
2 these gaps in the market."

3           Clearly, not having a structure and  
4 standards for how those ratings are done in  
5 California is something that needs to be resolved.  
6 So I'm sure that will be addressed in some way,  
7 one way or the other.

8           Any other questions? Okay, then I'll  
9 move right along and introduce Tony Pierce from  
10 Southern California Edison. He is the project  
11 manager here for the contract of Heschong Mahone  
12 Group. And will talk a little bit about the  
13 project and introduce Lynn.

14           MR. PIERCE: Good morning, and thanks,  
15 Bruce. Appreciate the opportunity to address the  
16 group as we kick off the AB 549 project in the  
17 public sector.

18           I wanted to give you a little bit of  
19 background in terms of introducing the IOU's  
20 efforts in support of AB 549. I want to tell you  
21 briefly who the team consists of, they're all here  
22 today. And then just give you an introduction to  
23 the project, and have our lead consultant to HMG  
24 go into some of the early project discoveries,  
25 project reporting.

1           The investor-owned utilities, the four  
2 investor-owned utilities in California, initiated  
3 a codes and standards program that is funded with  
4 public good charges, PGC funds, in 2000.

5           So this is the fourth year of the  
6 statewide codes and standards program. I know  
7 many of you in the room have been following or  
8 working on the Title 24 Building Efficiency  
9 Standards and the Title 20 Appliance Standards.

10          And you all have seen the term "CASE  
11 study" or "CASE initiative." CASE is an acronym  
12 that we came up with for codes and standards  
13 enhancement. So these are initiatives developed  
14 by the statewide IOU codes and standards program  
15 team to promote and advocate for energy efficiency  
16 standards and enhancements.

17          The four investor-owned utilities in the  
18 state, if you're not familiar, are Southern  
19 California Edison, Pacific Gas and Electric  
20 Company, Southern California Gas Company, and San  
21 Diego Gas and Electric Company.

22          My project partners, as I mentioned, are  
23 here. Pat Eilert, program manager for Pacific Gas  
24 & Electric. Pat also has Charles Segerstrom  
25 supporting him here today. Lisa Fabula with San

1 Diego Gas & Electric. Lisa has Norma Cox here  
2 supporting her today. And Lynn Bardsley is here  
3 from Southern California Gas Company.

4 We set out, we actually received a phone  
5 call early last summer from Bruce and started a  
6 discussion process with the CEC staff into how the  
7 IOU codes and standards program could support the  
8 AB 549 mandate. And those discussions continued  
9 through last summer, describing the scope.

10 And we actually at the ACEEE conference  
11 in Monterey had an informal session that some of  
12 you were invited to, it was open to all the  
13 conference attendees, where we again scoped out  
14 what the magnitude of an investor-owned utilities  
15 project could be. And then late last year the  
16 investor-owned utility team brought HMG aboard as  
17 our lead consultant.

18 Primary objectives -- and Bruce has  
19 given you an overview, Bruce and Randel have given  
20 you an overview of the CEC staff objectives. Ours  
21 is a snapshot, or a little bit more condensed  
22 version of those objectives and tasks.

23 We're looking to study the existing  
24 building market, both res and non-res. What the  
25 energy efficiency measures that are available that



1     could be considered for standards enhancements  
2     are, and what the trigger events that would result  
3     in actually adopting or improving those building  
4     measures would be.

5             We're also then looking in the study to  
6     characterize and prioritize the measures and  
7     submit this report to the CEC staff. And we will  
8     be looking at demand as the bill states, but also  
9     at energy efficiency.

10            We crafted the work scope into seven  
11    tasks. And I'm just going to put them up here.  
12    You can see, briefly, we completed the first task  
13    back in February of this year and have been  
14    meeting with the IOU team and have been inviting  
15    the participation of the CEC staff so that they  
16    could make as best use of this report and its  
17    final product as they can, in replying to their  
18    mandate.

19            We also then proceeded with the research  
20    phase of the project, and just completed that  
21    about a month and a half ago. And then looked  
22    into segmenting the existing building market, and  
23    then looking at what key events are associated  
24    with those measures that might be considered in  
25    the building market segment.

1           And we have a draft report that we're  
2   working on right now. We expect that report to be  
3   submitted the end of this week. We're going to be  
4   meeting throughout the week, and that may move a  
5   little bit. But some time this month we'll have  
6   tasks three and four complete.

7           And then we'll look into how those  
8   events that we identified in the previous tasks  
9   would be included into standards and start to do  
10   some preliminary cost-effectiveness in determining  
11   what the ranking of the various measures may be,  
12   and what the statewide impacts would be.

13           So those tasks will wrap up the IOU  
14   report, and our projected completion date and  
15   delivery to the CEC staff for that final report is  
16   in November of this year.

17           And the last slide I have is just a Gant  
18   chart showing our project schedule going up into  
19   early November. So if you have any brief  
20   questions on the IOU effort I can take that, or  
21   we'll have a lot of discussion for this afternoon.

22           Seeing no hands, hearing no -- oh, Mike?

23           MR. HODGSON: The research that's been  
24   done on task two, is that available or listed  
25   somewhere?

1           MR. PIERCE: We can make that report  
2 available. Right now we have just the IOU web  
3 pages that have been reported up there. And CEC  
4 staff -- we can talk to them about making it  
5 available on a PDF so that they can put it on  
6 their web page.

7           MR. HODGSON: Great. thanks.

8           MR. PIERCE: Anything else? Thank you.  
9 I'd like to introduce Lynn Benningfield with  
10 Heschong Mahone Group. Lynn is the project  
11 manager for the IOU AB 549 project.

12          MS. BENNINGFIELD: Thank you, Tony.  
13 Okay, can you all hear me? I'd like to thank Tony  
14 and the IOU team. It's been interesting so far  
15 learning about such a huge topic, and trying to  
16 begin to put a box around the possibilities. And  
17 to hear additional possibilities that we haven't  
18 heard of.

19          And that's why we're here today mainly,  
20 to listen to you, to present what we've found so  
21 far, and then to listen to your input so that we  
22 can start the next phase, which is starting to  
23 rank them and vet them down to standards that  
24 could be, number one, easily adopted,  
25 automatically adopted, and number two -- with a

1 little help from IOU's or market preparation --  
2 could be adopted at a later date.

3 So here's the objective of our part of  
4 the meeting today. And there's a little bit of  
5 change from the listed agenda, if you don't mind,  
6 to facilitate the discussion. We want to  
7 categorize residential market and then discuss  
8 potential enhancements to the residential market.

9 And then we want to shift gears to the  
10 non-residential market and do the same thing. I  
11 believe the agenda says we're going to  
12 characterize everything and then talk about it  
13 later, we're actually going to do it by market  
14 segment.

15 This is an abstract concept drawing of  
16 what could be done for existing buildings. And  
17 this is a line -- obviously there's no scale to  
18 this drawing. But new construction has improved  
19 through codes and standards, appliance efficiency  
20 standards, and through IOU programs.

21 New construction has come a long way in  
22 terms of energy efficiency. Cost per square foot  
23 is much lower, although homes are bigger. But  
24 we've made substantial progress in that arena.  
25 The existing stock is slowly improving over time

1 as the new stock is folded in to the existing  
2 stock.

3 This line is meant to represent the  
4 current efficiency of all buildings, and that's  
5 with all the impacts that happen along the life of  
6 a building. The appliance efficiency standards,  
7 any applicable building energy efficiency  
8 standards, any participation in voluntary  
9 programs. That's what that line is supposed to  
10 represent.

11 And then here's what we're looking at.  
12 We're not sure how far up we can go. We're not  
13 sure if we can even surpass new construction.  
14 That's yet to be determined.

15 Okay, let's talk a little bit about what  
16 residential market looks like. There's no big  
17 surprises here. Single family detached is by far  
18 and away the number one in terms of number of  
19 units in California and square footage. There's a  
20 significant amount of multi-family buildings that  
21 are out there.

22 In terms of who owns and who rents,  
23 here's a breakdown by building type. Single  
24 family detached, again, has 6.5 million units.  
25 And you can see it's a substantial fraction. I'll

1 give you a minute to look at this.

2 Then I have it broken down by who owns  
3 and who rents. There's a significant chunk of  
4 renters in California, but of course owner-  
5 occupied is still the number one category. Yes?

6 MR. BORSTING: Do you have it broken  
7 down by -- I'm sorry, Eric Borsting. Since the  
8 energy code has taken effect, do you have it  
9 broken down energy code by energy code? For  
10 houses?

11 MS. BENNINGFIELD: Yes, we do. We'll  
12 get to that in a second. We have more data than  
13 I'm presenting today. The short answer is that  
14 most of existing stock is old, and is impacted by  
15 appliance efficiency standards and somewhat the  
16 building energy efficiency standards, but there's  
17 still a lot of potential there.

18 And this helps to illustrate it. This  
19 actually shows the turnover, return rate,  
20 basically, of stock. So that's relatively small,  
21 but it's a large number of units that are turned  
22 over every year in resale. And a substantial  
23 portion of those are older homes.

24 What we're doing is we're going to break  
25 it down by standards version, so that you'll

1     see -- 1982, '83 was sort of the landmark year for  
2     scanners. There was a little HCD impact before  
3     that, but most of the existing stock was built  
4     before 1982.

5             The older buildings do have a larger  
6     cost per square foot. But the newer homes are  
7     much larger than older homes, even with additions.  
8     And the appliance saturation is a bit higher. And  
9     standby loss in appliances is having a larger and  
10    larger portion of energy. Yes?

11            MR. MESSENGER: Can I ask -- Mike  
12    Messenger with the California Energy Commission.

13            MS. BENNINGFIELD: That's Mike Messenger  
14    with the California Energy Commission.

15            MR. CENICEROS: Will you please step up  
16    to the podium there so it will pick you up. Sorry  
17    for the inconvenience.

18            MS. BENNINGFIELD: A lot of these  
19    questions that are coming up will probably be  
20    issued in the report that's going to be issued in  
21    a week or so. So you'll have a little bit more  
22    detail in terms of the breakdown, from that  
23    report.

24            MR. MESSENGER: My question is have you  
25    looked at how those two effects counteract in

1 terms of total bills? For example, does the  
2 average home build post-1990 have a higher energy  
3 bill or a lower energy bill than the average home  
4 built pre-1982, for example?

5 MS. BENNINGFIELD: From memory --  
6 Cynthia, you might be able to help me here. I  
7 believe the data we saw shows new home buyers are  
8 still paying more at the meter.

9 Okay, we already covered those. Okay,  
10 what impacts a building now? From the regulatory  
11 side. Typically, when the appliances are replaced  
12 the current appliance efficiency standards, the  
13 federal efficiency standards that are in place at  
14 the time, will increase the efficiency of the  
15 appliance that is replaced.

16 And any time a home is remodeled if  
17 something is touched related to energy and there  
18 is an appliance standard evoked, or the building  
19 energy efficiency standards are evoked, as with  
20 additions, then there is an opportunity to impact  
21 at that point.

22 And then the third bullet, at the  
23 bottom, shows the utility incentive programs also  
24 have an impact on existing buildings.

25 The bullets on the left are indicating



1 trigger points, where things might happen, where  
2 upgrades might happen, and then the ones at the  
3 right are what happens, what is the mechanism that  
4 affects the trigger.

5           Okay, let's look at a residential  
6 building. Here's, again, this efficiency in time  
7 per minutes in abstract with no scale. Typically  
8 a house, once it's built, if nothing is done to  
9 it, no appliances are replaced, the energy use,  
10 the efficiency, will degrade over time. The  
11 insulation will settle, etc. The appliances will  
12 operate less efficiently over time.

13           So you have this sort of natural  
14 degradation process. Now there are points along  
15 the way where actions will be taken that will help  
16 boost up the efficiency, and can and do boost up  
17 the efficiency of the existing stock.

18           And here's some of the trigger points  
19 where that happens now. These are appliances that  
20 are covered by appliance efficiency standards, and  
21 these are approximately the lifetimes of these  
22 various appliances. So the dishwasher doesn't  
23 last as long as a refrigerator, for example. And  
24 the HVAC unit is typically replaced -- I think  
25 it's around year 13.

1           There will be two dishwasher  
2   replacements in the life of the house. What did  
3   we start out with, about 25 years? Yes. Even  
4   though I said there was no scale, there is. There  
5   is in our heads, but I didn't want to put it out  
6   there because I was afraid people would take it  
7   apart. And "well, gee, it really lasts 13 years  
8   and not 12."

9           I just wanted to show -- oh, on the  
10   timeline of the building, these up arrows are the  
11   opportunity to make the building higher in  
12   efficiency and close to the purple one.

13           COMMISSIONER PERNELL: But your timeline  
14   is --

15           MS. BENNINGFIELD: 25 years.

16           COMMISSIONER PERNELL: 25 years. Is  
17   that the typical life of the building?

18           MS. BENNINGFIELD: No, it's much longer  
19   than that. We can go out further and further if  
20   we like. What we plan to do in the next phase,  
21   after we target a few options, is to look further  
22   and further into the statewide impacts of those  
23   options.

24           What age house does it have higher  
25   impact than another age? How many times will this

1     happen? Will there be opportunities along the way  
2     to make it even more efficient?

3             So, since it's such a huge project and  
4     such a -- you know, there's two kinds of  
5     buildings and they all last a long time. Many  
6     things happen along the course of the building,  
7     you need to start narrowing it down at this point.

8             But the dotted lines now represent new  
9     opportunities that we see. These aren't by any  
10    means the total list of opportunities, but these  
11    are trigger points where we can look at improving  
12    the efficiency of the building. So this would be  
13    a time-specific illustration of what might happen  
14    to cause the building to come full circle to the  
15    purple line there.

16            For example, something could happen at  
17    the time of sale. Maybe home energy rating could  
18    happen at the time of sale. Maybe some  
19    improvements could be put in, and associated with  
20    the recommendations from that rating. It can  
21    happen again at the next sale, or if the ratings  
22    square were high enough perhaps it wouldn't be  
23    required at the second sale.

24            At the time the roof is replaced is a  
25    great opportunity to look at cool roofs,

1 photovoltaics, attic insulation and other things -  
2 - ducts, ceiling. The roof replacement provides a  
3 very good opportunity.

4 But these aren't by any means all of  
5 them, so we'd like your input on what other  
6 triggers might occur along the time of a home's  
7 life.

8 Here's a list we've come up with for  
9 typical triggers on the left hand side, and the  
10 opportunities those triggers might provide on the  
11 right hand side. A lot of these triggers do call  
12 into play energy appliance efficiency standards  
13 now, but there may be some expansion  
14 opportunities, and there may be some other  
15 opportunities too.

16 And these triggers apply to both  
17 commercial and residential. You'll see some here.  
18 Building lease, for example, typically doesn't  
19 have a residence, but rental would. So there  
20 could be a trigger that's associated with renting  
21 a house.

22 And now is the time when we kind of  
23 would like your ideas on some potential measures  
24 or some potential trigger points that could impact  
25 a residential building. What we plan to do next

1 is to map these opportunities, using a similar  
2 chart to this.

3 The triggers are going to be listed  
4 here, and then the current impact mechanisms are  
5 listed across the top of the columns. And then  
6 we're mapping whether or not there is an existing  
7 impact and not necessarily quantifying the amount  
8 of that impact, but is there an impact there now,  
9 and is there an expansion potential there now.

10 And I've filled in a couple just to show  
11 you an example. The next slide will also  
12 recognize where opportunities lie and help to  
13 quantify it.

14 Currently, the building energy  
15 efficiency standards may impact the remodels,  
16 depending on what type of a remodel is done.  
17 Normally they don't impact it very much, unless  
18 there's an energy using device that's replaced.  
19 And at that point it's really an appliance  
20 efficiency standard trigger.

21 If it's an addition that's built at the  
22 time of the remodel then definitely the standards  
23 would apply. But there is a somewhat promising  
24 expansion potential for time of remodel building  
25 energy efficiency standard impact. And that may

1     require expansion authority.

2             But that time is a perfect time to look  
3     at the building and see what is cost-effective to  
4     do with that building. The same thing is true of  
5     the sale of a building. Right now there's no  
6     energy requirements that take place at the time of  
7     sale, but it's possible that it's a great  
8     opportunity to take some action at that point.

9             As I mentioned before, it's a good time  
10    to do some kind of efficiency rating on the  
11    building. It's also a good time to improve, to  
12    take some improvements. There are some things  
13    that could be done in conjunction with a home  
14    inspection.

15            So we feel that's one example of an  
16    opportunity where the potential could be  
17    increased.

18            Now what could be done? And equipment  
19    replacement -- the green means very likely, the  
20    yellow means somewhat likely, and the red means  
21    not likely. So if an HVAC unit is replaced then  
22    obviously there's a very likely opportunity for  
23    efficiency improvement.

24            If a certain amount of time has passed  
25    it's likely that the energy efficiency ratio of

1     that unit is available. The consumer has the  
2     option to increase this, of course, beyond the  
3     minimum.

4             Then we have lighting system upgrades.  
5     Sometimes when homes are remodeled lighting  
6     systems are upgraded, and that's also a very  
7     likely trigger point.

8             Building an envelope upgrade.  
9     Typically, when equipment's replaced, building an  
10    envelope upgrade doesn't necessarily mean that  
11    equipment will be replaced, although it could  
12    happen.

13            And it's possible that when equipment is  
14    replaced that some controls associated with that  
15    equipment could be required to be installed which  
16    makes them operate more efficiently, and that also  
17    is a possibility.

18            We've also listed tariff charge rating  
19    opportunities separately, because these are new  
20    developing areas which could have substantial  
21    impact on existing buildings.

22            Dynamic pricing, time of use rates,  
23    could be used in conjunction with control systems,  
24    for example, installation to provide the homeowner  
25    the opportunity to control their own rate and

1     their own energy bill. And controls could be  
2     installed such that the homeowner can actually  
3     take action at peak times to manage their bill and  
4     their household energy usage.

5             And then there's also when equipment is  
6     replaced, that's also a good time to look at the  
7     overall house as a system, and look at some  
8     opportunities that go beyond just replacing like  
9     with like or like with slightly improved.

10            Okay, I think it's time now -- if  
11     there's any questions I can answer them, but I'd  
12     like to turn it back to the CEC for discussion at  
13     this point, general discussion. Are there any  
14     specific questions about the market  
15     characterization, for example? I can talk about  
16     those.

17            And then I'd like to open up kind of a  
18     brainstorming session that the CEC will be leading  
19     about what kinds of things can be done. Okay,  
20     great, I'll turn it back over to you.

21            MR. CENICEROS: So, just to make sure  
22     we're going in the right direction here, then  
23     you'd like to receive comments on the overall  
24     presentation and then go into a brainstorming  
25     session when those comments and questions are --



1 MS. BENNINGFIELD: Yes.

2 MR. CENICEROS: And this is focused on  
3 residential segmentation, market characterization,  
4 and opportunities, right? Okay, any questions  
5 from the audience or on a phone?

6 MR. WARE: Dave Ware with Owens Corning,  
7 I guess I'll break the ice here a little bit.  
8 Actually, I think it was on the first draft that  
9 was presented, or one of the first drafts.  
10 Efficiency potential graph -- and I realize it was  
11 somewhat hypothetical to show the 45 degree angle  
12 showing new buildings and then the potential for  
13 existing buildings.

14 And basically I think you were showing  
15 the area in-between the two slopes of the lines  
16 that were potential for improvements between  
17 existing buildings and moving up to new  
18 construction.

19 And I don't think I'm trying to  
20 criticize, but really what's happened is the new  
21 buildings aren't really improving, they are  
22 actually flattened out.

23 Because new construction typically only  
24 meets the efficiency level of the new building  
25 code. So, in essence, over time, it seems like

1     whatever happens in this activity isn't  
2     potentially going to -- at some point you're going  
3     to maximize at best where the level of the new  
4     construction energy code is, as opposed to over  
5     time improving all building stock beyond what the  
6     energy code is.

7             So there is, for better or worse, a  
8     finite level of improvements that could be made  
9     both from the consumers standpoint and from the  
10    state of California's energy savings standpoint.  
11    I'm not sure what my point was, but I wanted just  
12    to illustrate that issue in the graph.

13            There is a potential in this activity to  
14    go -- for existing buildings -- to go even beyond  
15    what the combination of things that you're going  
16    to present today, I'm sure, that go beyond the  
17    efficiency level for new construction.

18            And I think that that is a very good  
19    thing. And I hope it's an opportunity that we  
20    don't lose in this activity.

21            MS. BENNINGFIELD: Yes, the IOU team and  
22    the CEC staff, all of us spent a lot of time  
23    trying to figure out how to show this. And that  
24    issue exactly came up. Well, really, you should  
25    sort of blend the potential beyond the line, maybe

1 the new construction line should be flatter.

2 There's lots of nuances we can consider.

3 And this is really an abstract concept,  
4 and by no means are we trying to limit what we're  
5 looking at. And I agree with your points. Do you  
6 guys have anything to add?

7 MR. CENICEROS: Yes. Part of the  
8 problem is as soon as a new building is occupied  
9 it becomes an existing building. So I think what  
10 Lynn is trying to show in the graph there is the -  
11 - with time, a building built in that year, that's  
12 about the efficiency level that you can expect.

13 That goes up over time for each building  
14 built in subsequent years. And as soon as that  
15 building is occupied and a little bit of time  
16 passes there's all sorts of opportunities. I made  
17 upgrades in mine the week after I moved into my  
18 new house.

19 So the point is well taken. Keep that  
20 in mind as we're distinguishing between new  
21 buildings and existing buildings. Because they're  
22 only a new building for an instant in the life  
23 there of the building.

24 MR. MAHONE: I think also it's important  
25 to remember that that graph sort of characterizes

1 the efficiency of new construction, and it's not  
2 just what the code readers say. It's the  
3 combination of the code plus whatever the utility  
4 programs or any other sources are doing to affect  
5 the efficiency of that new building at the time  
6 it's built.

7 MR. WARE: Thank you.

8 COMMISSIONER PERNELL: Dave, before you  
9 leave we do have a -- you asked a question  
10 earlier about AB 1574? Lowenthal? And basically  
11 the bill is voluntary but it adds the -- it allows  
12 the seller or the buyer to ask for a home  
13 inspection.

14 And it also directs the CEC to come up  
15 with recommendations as to how to improve the  
16 efficiency of homes based on whatever the home  
17 inspection is. So it's -- it doesn't mandate  
18 anything, but the appraisal is something different  
19 than a home inspection.

20 I think a home inspection looks at more  
21 of the mechanical and structural condition of the  
22 building. So I'm not sure that it can be rolled  
23 in to what we're doing. Maybe it can. We got our  
24 staff and consultants to look at that.

25 But this bill doesn't specifically

1 mandate us to set any type of regulation. It  
2 allows the homeowner or the buyer to ask for a  
3 home inspection, and it kind of identifies who's  
4 qualified to make those types of inspections.

5 MR. WARE: Thank you, Commissioner. My  
6 point was, the intent of the two bills are very  
7 similar, and this bill, I think you might say, has  
8 a larger scope than 1574, and I agree with you  
9 that there's nothing specific as far as a  
10 mandation within the 1574 directing the Commission  
11 to do something specific other than to disseminate  
12 some measures that would enhance energy  
13 efficiency, I'm paraphrasing one of the paragraphs  
14 in here talking about the Energy Commission.

15 But it seems to me that's there's an  
16 opportunity just to put them together. I would  
17 think that this activity also would look at home  
18 inspection process. And so, that relates to 1574.

19 COMMISSIONER PERNELL: I think you're  
20 point is well taken. That there could be  
21 opportunity here, and I -- I don't want to speak  
22 out of turn here -- I think we're going to look at  
23 that as we go forward.

24 MR. CENICEROS: In some of the earlier  
25 brainstorming sessions we've done, we did a little

1 brainstorming session at the ACEEE summer session  
2 last fall. And this is one of the ideas that was  
3 brought up then. I've heard it brought up  
4 subsequently.

5           So we will be looking at -- first of  
6 all, there is a need part of this equation, that  
7 homes need to be evaluated before their sold, or  
8 may need to be evaluated before their sold. And  
9 the next part of that questions is who is in the  
10 best position to do that?

11           Home inspectors are already in the home,  
12 they're certainly great candidates, there are HERS  
13 raters out there, there are possibly other  
14 mechanisms for accomplishing that.

15           And so we will consider that within the  
16 scope of the AB 549 project, and make a  
17 recommendation probably in terms of how that  
18 activity should happen, if it's an important  
19 activity that we think it needs to happen.

20           MR. WARE: Okay.

21           MR. CENICEROS: We had a request here.  
22 I think Mike Messenger had a question first, and  
23 then we'll get to you, but I did want to clarify  
24 what it is we're doing right now.

25           We're looking for general questions

1 about the slide presentation you saw there. And  
2 we will be moving right after that into a  
3 discussion about opportunities, and where you  
4 thing the opportunities lie here.

5 And then in the afternoon we'll be  
6 talking about strategies or mechanisms that would  
7 help capture those opportunities. Mike Messenger,  
8 you had a question? You're going to concede to  
9 this gentleman? Could you please state your name  
10 and your comment, please?

11 MR. QUINN: Patrick Quinn, Q-u-i-n-n. i  
12 conducted the initial diversity test in Sacramento  
13 in 1979 and '80. And I find the matter her  
14 brought up by this gentleman here is a matter of  
15 achieving equivalency in performance.

16 And in that context the question is  
17 matters of achieving equivalency at what point in  
18 time between Title 1 and new buildings and  
19 existing buildings.

20 And in that regard, who would be  
21 responsible for conducting the tests is the  
22 determinations of the controller systems that are  
23 already installed in either the existing as-built  
24 inventory and/or the new buildings.

25 So the question comes down to matters of

1     equivalency and achieving equivalency in terms of  
2     functionality and when that will actually occur.  
3     At what point in projected time does the Energy  
4     Commission anticipate that will happen in terms of  
5     the proposed inventory projections of new  
6     construction?

7             Because those are matters that have  
8     concerned those of us who have been participating  
9     at both the statewide levels and the national  
10    levels and the regional levels for the past 25  
11    years. That was the initial task that we were  
12    assigned in 1978 through 1998.

13            So I have been part of that team  
14    originally that conducted those tests. And also,  
15    in terms of pass/fail methodologies in developing  
16    those methodologies over the past twenty-some  
17    years. I've been intimately involved. So in that  
18    context I'm asking that question.

19            MR. CENICEROS: Mr. Quinn, when you say  
20    equivalency do you mean the prospect of bringing  
21    an existing older building up to the same level of  
22    efficiency as a new one built today?

23            MR. QUINN: Well, the task that we were  
24    initially given in the 70's and 80's was to  
25    determine clustering, and suddenly the word



1 clustering in terms of a task to monitor an  
2 internal function was dropped.

3 And over the past 12 to 14 years the  
4 word clustering has not been injected into the  
5 test methodologies or those experiments that were  
6 conducted at the beta level, or within the PEER  
7 program.

8 So in that regard I expected that the  
9 PEER program did investigate the clustering  
10 potential, and therefore has developed specific  
11 case answers to that functionality, and the  
12 multiple functionality and how that is to be  
13 determined, and who's going to perform those tests  
14 to distinguish in the home inspection procedures  
15 and the appraisal procedures that question of  
16 testing.

17 And the missing link has not entered  
18 into this discussion.

19 MR. CENICEROS: Thank you, Mr. Quinn.  
20 I'd be interested in talking to you at the break  
21 and get more details about that past work. That  
22 might be very helpful. Mr. Messenger?

23 MR. RIEDEL: If I could interject for a  
24 second, Mike. We're picking up some background  
25 from people that are in on the conference call.

1     So this is just to alert you to pay attention to  
2     your noisemaking while proceedings are ongoing.  
3     Thank you.

4             MR. MESSENGER:   Okay.   Ready for me now?  
5     I have a question again about that efficiency  
6     potential diagram, which to me was a little bit  
7     confusing.

8             I think that, for example, you need to  
9     get a handle on what you mean by, how you're  
10    defining, what units you're using for efficiency  
11    potential.  Is that KBTU per square foot, or is  
12    that an energy unit, or is that some kind of  
13    percentage method?

14            Because, intuitively, the existing stock  
15    efficiency potential, I'm not sure that it  
16    increases over time.  In fact, I think performance  
17    degrades over time as opposed to increasing over  
18    time.

19            And actually, I think, now that leads me  
20    to just make some suggestions about how to look at  
21    opportunities.  It seems to me if you want to  
22    improve the efficiency of any existing building  
23    over time there's basically three strategies.

24            One is to slow down the rate of decay.  
25    All the equipment that's installed, for example,

1 it's efficiency is slowly degrading over time.  
2 The insulation efficiency is degrading over time.  
3 So there may be some ways that you can slow down  
4 the rate of decay.

5 Just as a side note, I'm currently  
6 having the furnace system replaced at my house.  
7 And when I asked each of the contractors what they  
8 thought the efficiency decay had been over the 20  
9 years that this furnace had been in I was amazed  
10 with the range of estimates I got.

11 I mean, everything from it's only  
12 operating 25 percent as efficient as it used to,  
13 to 75 percent. And then a lot of people just said  
14 well, it's about half as efficient as when it was  
15 originally installed.

16 So there seems to be a wide range of  
17 estimates about how fast degradation is happening  
18 over time. I don't think it's quite that fast  
19 because I think my bill would be accelerating if  
20 that was the rate. So that's the first type of  
21 strategy.

22 The second one is you want to try, if  
23 possible, to accelerate the rate of change of  
24 appliances. Because, as we've heard before, when  
25 appliance standards kick in, generally speaking,

1     when you're replacing any appliance in your house  
2     the odds are that's it's likely to be more  
3     efficient than the one that's sitting in the  
4     existing house.

5             And then the third type of change that  
6     you might want to look at is, anything when you're  
7     doing a remodeling or anything that affects the  
8     thermal characteristics of the house, whether it's  
9     as simple as replacing a door to as difficult as  
10    putting in a couple of new rooms, that to me is  
11    the third place where you could significantly  
12    affect the efficiency of the house.

13            How that interacts with this term called  
14    efficiency potential I'm not sure, and hopefully  
15    when I read the report I'll be able to understand  
16    that better. Thank you.

17            MR. CENICEROS: Thank you, Mike.

18            MS. BENNINGFIELD: Thanks for pointing  
19    that out, Mike. The slide may be improperly  
20    titled. Efficiency potential of buildings,  
21    that's the end result. Maybe I should back up a  
22    bit. This may take awhile for clarification but I  
23    think it would be worth it. There we go.

24            Okay. It's not supposed to have any  
25    units with it, it's supposed to be relative. And

1 I know that's kind of fuzzy but that's where we  
2 want to start at this point, because we don't know  
3 what's the KBTU's per square foot yet. It's  
4 something along those lines, it's a relative  
5 efficiency. And the second --

6 MR. MESSENGER: Can I interrupt for a  
7 second. Is it efficiency or is it efficiency  
8 potential? Those are two different things.

9 MS. BENNINGFIELD: That's the thing.  
10 It's efficiency. So new construction building  
11 energy efficiency is shown by this first one. The  
12 last thing, where it's all shaded in, that's  
13 really the only time we're looking at potential.

14 So what we're trying to communicate is  
15 here, that we built new residential buildings have  
16 increased -- and commercial -- have increased due  
17 to energy efficiency standards and volunteer  
18 efforts and beyond the code efforts of utilities  
19 over time.

20 Then the reason the stock goes up  
21 slightly on the slight slope is that the new  
22 buildings are folded in to the existing stock. So  
23 while an individual does degrade, as you say, the  
24 total stock is affected by the amount of new  
25 structure.

1           And then this one is supposed to reflect  
2   the current triggers that affect the existing  
3   building stock. Like when the HVAC unit is  
4   replaced. It may be 20 years -- yours was 20  
5   years? -- normally it's a little bit less than  
6   that. But when the HVAC unit is replaced the  
7   efficiency of a home goes back up.

8           And the efficiency of the HVAC system  
9   goes higher than it ever has been. Because when  
10   the home was initially built the standards were  
11   lower. So that's what this orange line  
12   represents. That slowly, over time, the existing  
13   stock is affected by building energy efficiency  
14   standards, appliance efficiency standards, and IOU  
15   programs.

16           Then this shaded area, which some have  
17   said should actually go above the line, we're not  
18   sure where we are in there, if we're above it,  
19   below it, in the middle somewhere. And, you know,  
20   what the outcome of this process is.

21           We will, all we're trying to say here is  
22   that we will push the relative efficiency of the  
23   existing stock up closer towards what the  
24   efficiency of the new construction is, and maybe  
25   beyond, depending on what the mechanisms are and

1 the actual measures are that we decide to look at.  
2 Does that clarify it a little more?

3 When you look at an individual building,  
4 that's kind of a different story. And that's the  
5 other graph that shows the curve going down. This  
6 is supposed to portray the whole stock out there  
7 in California, which is substantial.

8 MR. CENICEROS: Mr. Proctor?

9 MR. PROCTOR: John Proctor, Proctor  
10 Engineering Group. I just would like to urge you  
11 not to overestimate the amount of degradation.  
12 Obviously, all the contractors speaking to Mike  
13 overestimated the degradation, which probably is  
14 pretty close to zero if he properly maintained his  
15 furnace -- which he may not have, I don't know, I  
16 haven't checked it.

17 In general, the residential buildings at  
18 least, and probably true on commercial buildings  
19 as well, the degradation is much less than we  
20 think it is.

21 And there have been a number of studies  
22 which -- if you're going to use the numbers or  
23 make the assumptions I would suggest that you look  
24 at some of those studies on degradation, because  
25 in many cases it's quite small. Thank you.

1 MR. CENICEROS: Thank you, John.

2 MR. QUINN: I have a comment about  
3 obsolescence factor and degradation. The word is  
4 capture. If you don't know how to capture the  
5 data in conducting your respective case-by-case  
6 test you better learn what capture means.

7 Because I've been doing it for 50-some  
8 years. So it's capture of the efficiency on a  
9 case-by-case basis. Obsolescence factor is  
10 obsolescence. However, the deterioration of the  
11 building is to be measured you have to capture  
12 that particular situation over a seasonal period  
13 of time.

14 On a 24-hour basis, 365 days a year,  
15 it's quite simple. Degradation is degradation,  
16 obsolescence is obsolescence, deterioration is  
17 deterioration, captured data is captured data. If  
18 you don't capture it every five or ten minutes or  
19 fifteen minutes it's gone, gone.

20 MR. CENICEROS: Thank you, Mr. Quinn. I  
21 want to clarify that we won't be doing any  
22 monitoring of existing buildings, but relying on  
23 the newer studies which are out there with data  
24 for that. And possibly the ones you referred to  
25 earlier.



1           I would like to move on pretty soon here  
2   to talking about the potential in the residential  
3   area. Are there any more comments or questions  
4   about the slides or overall process that Lynn went  
5   over in her presentation? Yes, Mike?

6           MR. HODGSON: Thanks, Bruce. I have a  
7   question about Lynn's presentation. Mike Hodgson.  
8   One of the slides that Lynn presented was on  
9   current residential impacts. And one of the  
10   options was building energy efficiency standards.

11           And many of us have been sitting in this  
12   room for the last couple of years talking about  
13   2005, and when we get to the retrofit  
14   requirements, if you will, and the potential  
15   standards that are being proposed, there seems to  
16   be a fairly active discussion between the Energy  
17   Commission and the Housing and Community  
18   Development as to who has that authority.

19           And the building officials are somewhat  
20   concerned over what those rules are and what they  
21   need to respond to. I know Commissioner Pernell  
22   kind of suggested that we take the bull by the  
23   horns and have a meeting with HDC. And I'm not  
24   quite sure.

25           We're talking about a lot of potential

1 impacts on the retrofit market, and we're talking  
2 potentially building energy efficiency standards  
3 that have an impact on the retrofit market. I'm  
4 wondering if that's been clarified, or whether  
5 that's an issue that's still outstanding?

6 COMMISSIONER PERNELL: Yes, I do recall  
7 those discussions. However, the director of HDC  
8 has changed. And I just recently, last week, had  
9 a meeting with Mr. Franklin, who is the new  
10 director of HDC, and brought this forth.

11 And they are now in the process of  
12 looking at that, and getting back to us. I think  
13 we're close, but since he was new he wanted to  
14 come in and look at the proposed '05 standards and  
15 talk to his staff. We were close with Ms.  
16 Boorstein (sp?), who was the previous director.

17 But she left, so that set it back a  
18 little bit. But those discussions are going on,  
19 and we want to, as I have indicated to him, be  
20 sure that our standards doesn't conflict with any  
21 of their regulations and their might be a possible  
22 MOU in the works.

23 However, nothing's final yet. we're  
24 waiting to hear from him. And that just happened  
25 last week, so --.

1 MR. HODGSON: Thanks for the update.

2 COMMISSIONER PERNELL: All right.

3 MR. CENICEROS: Did anybody from HDC  
4 make it to the workshop today, by chance? We'll  
5 be coordinating with that agency, though,  
6 througHout this project. Okay, any other general  
7 comments about the presentation?

8 Let's go ahead and move on then, and  
9 have a little brainstorming session or discussion  
10 about -- maybe you could put that slide back up  
11 with the matrix on it -- about the opportunities  
12 in the residential existing buildings market.

13 We're trying to get a handle on what  
14 types of actions and measures and etc. make sense  
15 at the various trigger points in the life of the  
16 home -- of the resale or remodel, etc. And any  
17 insights you can lend into that would be helpful.

18 If you'd also just like to talk in a  
19 more general sense about opportunities that you've  
20 seen in the field that you're aware of that you  
21 think we need to definitely take a look at, please  
22 bring those up as well.

23 And again, for anyone sitting in the  
24 back rows here, please come up to the podium and  
25 talk into the microphone. And in each case please

1 state your name for the record. Thank you.

2 MR. RIEDEL: I have one last  
3 housekeeping item for the people on the conference  
4 call. If you have a mute device on your phone  
5 would you please mute while you're not presenting  
6 any information to us. Thank you.

7 MR. CENICEROS: Okay. Comments,  
8 questions, suggestions about potential?

9 MR. DAY: I guess somebody's got to be  
10 first. I'm Michael Day, I'm with Rockwood  
11 Consulting. This is slightly off-topic, but it  
12 might provide something of a conceptual framework  
13 that we could go forward with in the future.

14 Something that's similar is the  
15 Sacramento Metropolitan Air Quality Management  
16 District, and the way that they are a part of the  
17 permitting process for new projects. You have  
18 to -- it's called the AQ 15 program.

19 They have essentially a smorgasbord of  
20 points available from a wide variety of different  
21 disciplines. From HVAC measures to light rail  
22 stops, to charging stations for electric vehicles.

23 And because they came from a whole  
24 number of types of entities, values are able to be  
25 placed on them by the public at large and market

1 tables to assign some values to it. And new  
2 technologies that come up are assigned a point  
3 value. And if they are competitive they work  
4 their way in.

5 Just as -- to throw something out  
6 there -- if we were doing something with  
7 residential at point of sale, an energy survey, a  
8 first survey could come through, establish this  
9 house right now is at 12 points, and the code  
10 could say that we need to be at 15.

11 And the homeowner could look and say  
12 "okay, I need to pick up three points. Well, I  
13 get five for changing my windows, or I get three  
14 for changing my HVAC."

15 But something along those lines, where  
16 individual measures and upgrades could be offered  
17 two points, where a baseline based on KBTU's per  
18 square foot per year in both space cooling, space  
19 heating and water heating, could establish where a  
20 current structure is, and the effects upon that  
21 per year could be defined.

22 But generally speaking, leaving it to  
23 the marketplace to the maximum extent possible,  
24 and letting individual measures compete, as  
25 opposed to being mandated. Thank you.

1           MR. CENICEROS: Thank you for that great  
2 suggestion. Yes?

3           MR. HOGAN: John Hogan, city of Seattle.  
4 I think -- I'll offer a little counterpoint here.  
5 I think working with market technicians is great.  
6 I would give you strong support for working with a  
7 regulatory mechanism to take advantage of  
8 processes that are already in place.

9           And so once somebody has decided to  
10 remodel, our experience in Seattle and with the  
11 Washington state energy code, since 1980  
12 essentially whatever they touch needs to comply  
13 with the new construction requirements, with some  
14 caveats on that.

15           And essentially this allows people,  
16 whenever they are deciding to take on some  
17 projects, the scope of what needs to be altered to  
18 comply with the new construction requirements  
19 depends on the scope that they choose to take on.

20           So, for instance, if you are changing  
21 out some of the windows and you have a house, you  
22 decide you're going to change out 40 percent of  
23 the windows, our code would say whatever windows  
24 you're going to touch need to comply, so those 40  
25 percent would need to comply.

1           It doesn't seem as much different, yet  
2 opening a wall in an existing house or opening a  
3 wall in new construction, you'd have those comply.

4           For framed walls we require that if you  
5 open a cavity, you need to insulate that cavity.  
6 So you get to choose how many cavities you want to  
7 open, but if you're there and you open all or one  
8 wall then you just, you know, fill all the framing  
9 cavities in those walls.

10           It seems these are lost opportunities,  
11 you know, you can try and balance these with HVAC  
12 improvements and things like that, but the time to  
13 do it is when somebody is there actually doing the  
14 remodeling.

15           Lynn, I think, talked about roof  
16 replacements and roof insulation. We also require  
17 that if you are working on a roof and the roof is  
18 un-insulated, you need to comply.

19           So you're not necessarily going to open  
20 up the roof so much if you have an attic space,  
21 but if you have a multi-family building and you've  
22 got a flat roof you're liable to put so many  
23 layers of roofing on top of that.

24           And then at some point you need to rip  
25 all that off and take it down to the sheathing.

1 And we say at that point, if it's not insulated,  
2 you need to insulate it before you put that back  
3 on again.

4 So it seems you should take advantage of  
5 those opportunities. I heard people talk about  
6 the appliance standards, and we have the same  
7 thing for mechanical and lighting systems. If you  
8 replace the furnace then you capture that.

9 But we also say if you change the duct  
10 work, whatever duct work you change you need to  
11 insulate that when you do it. And so, again,  
12 piece by piece, as you elect to work on something  
13 you fix it. And after 137 remodels, you know,  
14 you've brought the whole building up to code.

15 But it's not a comprehensive thing where  
16 anybody has to look at the whole house and say  
17 what they do or don't want to do, it just falls  
18 into place with the scope of what's undertaken.

19 COMMISSIONER PERNELL: Let me just ask a  
20 question on that. First of all, thank you for  
21 being here, and coming down from Seattle.

22 In your example of replacing the  
23 windows, if you touch it you replace it. What  
24 happened if just one window got knocked out,  
25 somebody throws a baseball through it?



1           MR. HOGAN: One of the nuances in that  
2 is if the glass is broken you can replace the  
3 glass with what was existing. But if you change  
4 the sash and the frame, then you need to comply  
5 with the new construction requirements.

6           COMMISSIONER PERNELL: And it's not  
7 triggered on whether you need a building permit or  
8 anything? It's just any remodel, or any  
9 replacement?

10          MR. HOGAN: Right. I guess -- I'm not  
11 sure exactly how the standards work in California,  
12 but in Washington state the energy code  
13 requirements are the requirements for  
14 construction. Doesn't matter whether you get a  
15 permit. Doesn't matter whether it's an  
16 inspection. The requirement is the requirement.

17          So you have to comply with that. And  
18 the folks selling the windows know that, the  
19 utility representatives that run the utility  
20 incentive programs know that. So it doesn't  
21 matter whether you need to get a permit or not,  
22 you still need to comply with those requirements.

23          COMMISSIONER PERNELL: Just one final  
24 question. Do you know -- you may not know this --  
25 but do you know if the manufacturers are selling

1 the high-efficiency windows for replacements, or  
2 are they selling the less-efficient windows?

3 MR. HOGAN: In Washington state, a study  
4 that the Northwest Energy Efficiency Alliance has  
5 done says that more than 60 percent of the windows  
6 sold in the northwest are energy star windows,  
7 which in the northwest portion of the country  
8 means there's a U-factor of .35 or less.

9 So the manufacturers are very active at  
10 market. And what we find, actually, if you want  
11 to order clear glass instead of low E, for  
12 instance, that that's a special order, and that  
13 will cost you more, because some manufacturers  
14 have gone entirely to energy star windows.

15 COMMISSIONER PERNELL: So the market is  
16 responding?

17 MR. HOGAN: Yes. I think the regulatory  
18 framework helps push them along, too. So to the  
19 extent that we have code U factory requirements  
20 that call for a .40 window, and they can claim  
21 energy star if they're .35, why offer something at  
22 .38 or .39 when you can claim energy star at .35.

23 If there's a larger gap than they may be  
24 inclined to offer two tiers of products. One that  
25 barely meets the code and one that's the energy

1 star product.

2 COMMISSIONER PERNELL: Thank you.

3 MR. CENICEROS: Thank you for those  
4 comments, John. It looks like we'll have to take  
5 a close look at your coding as an example of one  
6 way to do it. Any other reactions or comments  
7 about that subject? John?

8 MR. PROCTOR: John Proctor, Proctor  
9 Engineering Group. Not about that.

10 MR. CENICEROS: Something else?

11 MR. PROCTOR: Is this an appropriate  
12 time to bring up particular measures?

13 MR. CENICEROS: Well, let me see first  
14 if there are any other questions that are more  
15 general in nature. That's kind of where we  
16 started into that, I think. Anybody else have any  
17 comments about--?

18 MR. MCCAFFREY: My name is John  
19 McCaffrey. I'm an architect and I write  
20 specifications for San Francisco, involved in the  
21 documentation of buildings. Residential work is  
22 usually not covered in an as-built situation,  
23 where these modifications are made over time I  
24 don't know how we're going to track this.

25 If a building is put up for sale and it

1 has to meet an energy efficiency rating, there  
2 should be some history attached to that structure  
3 that is maintained by the owner in some way. I  
4 think we have to look at this.

5 MR. CENICEROS: Good point. Any other  
6 general questions about the segmentation of  
7 markets? Okay. Go ahead, John. Let's talk about  
8 measures and potential.

9 MR. PROCTOR: John Proctor, Proctor  
10 Engineering Group. I'd like to give you my  
11 pluses, the things I think we should look closely  
12 at.

13 Insulation and insulation defects.  
14 There are many homes and commercial buildings with  
15 poor or no insulation. And many insulation  
16 defects.

17 Air conditioner sizing and peak  
18 efficiency -- read EER -- which should make the  
19 manufacturers who aren't here very nervous. Full  
20 air conditioning replacements, not partial  
21 replacements. It's real common to replace only  
22 the outdoor unit on a split unit.

23 A very bad idea. Probably lose about  
24 two EER parts in the process. As well, also on  
25 that line, there's also replacements that don't

1 include the equipment that's supposed to be there  
2 to get the rating EER. For example, time delay  
3 relays and the like.

4 Proper installation of those air  
5 conditioners -- you've all heard it from me a  
6 million times, so I just thought I'd bring it up  
7 again so you know I hadn't forgotten it.

8 Duct sealing, very important.  
9 Eliminating dogs. By dogs, I don't mean the  
10 little puppy dog types. I'm actually talking  
11 about air conditioners that are out there that are  
12 still running that are pulling many kilowatts,  
13 that are just terribly inefficient, and tuning  
14 them up isn't going to fix them.

15 And there's a lot of air conditioners  
16 out there like that, and they need to be removed,  
17 and we should come up with some strategy by which  
18 we can get those air conditioning hogs if you will  
19 as opposed to dogs pulled out.

20 Another thing which has been ignored for  
21 many years and I'd like to bring up again because  
22 it's such a beautiful thing, and that is shading  
23 windows. Wonderful thing.

24 Air leaking problems. There's a real  
25 problem in existing homes of bypassing the air

1 barrier high and low in the building, whether it's  
2 a commercial building or a residence. And so I  
3 think we should look seriously at that.

4 And really look seriously at the fact  
5 that caulking and weather stripping in general is  
6 not cost-effective. So when people talk about air  
7 leakage they often speak of talking weather  
8 stripping when in fact we ought to be looking high  
9 and low in the building instead at the leaks that  
10 really make a difference in energy consumption.

11 That's my short list.

12 MR. CENICEROS: Thank you, John. Dale?

13 MR. GUSTAVSON: Dale Gustavson, Air  
14 Conditioning Contractors of America. Just -- in  
15 thinking about some of the typical triggers, one  
16 that I believe is perhaps missing, because it  
17 exists in the marketplace -- and John's comments  
18 prompted me to think of fit -- is periodic  
19 maintenance of homes.

20 Many of our members have contractual  
21 relationships with homeowners that has them at the  
22 home from one to four times per year tuning up  
23 their air conditioning systems. So there are  
24 opportunities that we might talk about later  
25 today. But those are certainly triggers, and they

1 already exist.

2 In fact, I might go one step further and  
3 say a trigger would be, could even include the  
4 offer of maintenance contracts on air  
5 conditioning. And I'm not sure exactly where I'm  
6 going with that, but these are things that are  
7 going on in the marketplace, and there's an  
8 opportunity to have an impact on what happens next  
9 on the residence.

10 MS. BENNINGFIELD: Question for you. Do  
11 you have any data on what the saturation is of  
12 this effect you're talking about, the one to four  
13 times a year maintenance?

14 MR. GUSTAVSON: No, but I can probably  
15 get it, or get some ideas. But it's increasing  
16 residentially and commercially. Periodic  
17 maintenance, planned maintenance, is on the  
18 increase.

19 COMMISSIONER PERNELL: So that is a  
20 maintenance agreement that these -- the service  
21 provider will come out whether they're called or  
22 not? Most maintenance agreements that at least  
23 I'm familiar with that my wife has, they only come  
24 out when something breaks down. So that's --  
25 you're suggesting something different?

1           MR. GUSTAVSON: Yes. The entire  
2 industry over the last 10 to 12 years has moved in  
3 the direction of establishing a contractual  
4 relationship with the customer that binds both the  
5 customer and the company to make planned visits.  
6 It's happening residentially and commercially.

7           I'd say it's probably more predominant  
8 in the commercial marketplace, but it's become a  
9 regular part of how business is done  
10 residentially.

11           I have a contractor in my home that sent  
12 me a flyer. I was impressed by the fact that the  
13 flyer even made mention of energy efficiency. So  
14 I gave them a chance.

15           They came out and made a presentation,  
16 and now come to my home twice a year. They call  
17 in advance of when they've scheduled me to make  
18 sure I'm going to be home, and they do a complete  
19 inspection of the home and make recommendations  
20 for upgrades or improvements. And this particular  
21 contractor has energy efficiency on his list of  
22 things that he does.

23           This is something that we're trying to  
24 do at the association, is to make all contractors  
25 aware of the opportunities to upgrade, improve,



1 clean, in order to increase efficiency. It's a  
2 method of doing business that's definitely on the  
3 rise.

4 It takes the peaks and valleys out of  
5 their construction business. They want -- most of  
6 these tuneups are being done in the fall and in  
7 the spring when they aren't out at your house when  
8 things have broken. The idea is to keep them from  
9 breaking.

10 COMMISSIONER PERNELL: I would agree  
11 with the concept because when they get to my house  
12 it's too late. So if you're going to do  
13 preventive maintenance it should be on some type  
14 of regular schedule.

15 MR. CENICEROS: So the general concept  
16 here, Dale, is we give our cars a 30,000 mile  
17 checkup and a 60,000 mile checkup and all that,  
18 and there's a list of things that they look at  
19 each of those time.

20 But in an investment here, our homes,  
21 that's many many times what it is for our cars, we  
22 wait until it breaks, and maybe we should  
23 reconsider that approach. Very interesting. Yes,  
24 sir.

25 MR. CRAIGO: My name is Steade Craigo,

1 I'm an architect with the state Office of Historic  
2 Preservation. And I'm not quite sure when to  
3 introduce this subject to you in the discussions  
4 today on AB 549, but there are tens of thousands  
5 of historic commercial and residential buildings  
6 in California.

7 And under California regulations,  
8 qualified historic buildings are exempt from  
9 energy conservation regulations. I'm wondering if  
10 you had any idea, or we would be interested in  
11 knowing -- certainly our office, and probably the  
12 historic preservation community as well, and the  
13 California Historic Building Safety Board, which  
14 administers the California historical building  
15 code -- how AB 549 may or may not be addressing  
16 qualified historic buildings in California. Thank  
17 you.

18 MR. CENICEROS: Thank you for that  
19 comment. Definitely, historic buildings have  
20 unique challenges there in making upgrades. And  
21 we're going to be very sensitive to making sure  
22 that things are done in a way that preserves the  
23 historic character of the building and meets the  
24 goals of your organization and others. Other  
25 questions? Yes, John.

1           MR. HOGAN: I'd like to respond to that  
2 point. I think there is a really significant  
3 difference between residential historic buildings,  
4 like single family houses, and commercial historic  
5 buildings.

6           Most of the residential buildings -- our  
7 codes since 1980 have specified that the building  
8 official may allow some special treatment for  
9 historic buildings as long as there's some  
10 reasonable degree of energy efficiency  
11 improvement.

12           We take a look at what's the historic  
13 features of that building. So in a house maybe  
14 most of the envelope is exempt. We might expect  
15 that roof or floor insulation would comply, unless  
16 there was some reason not to do that.

17           Once you get into commercial buildings,  
18 you have whole historic districts -- we do in  
19 Seattle -- where really the only thing that's  
20 historic is the facade. Nobody wants an existing  
21 historic mechanical system, or nobody we know.  
22 Everybody wants a new mechanical system.

23           We've seen some historic lighting in  
24 libraries and a performance theater. It's usually  
25 in the building envelope, but within that, if it's

1 the historic district and it's just a facade we  
2 would expect the roof and floor to comply.

3 Even for the windows. If the upper  
4 couple of floors are historic and they need to be  
5 repaired, we would say sure that's fine. But we  
6 would say that virtually all the storefront at  
7 street level has been replaced multiple times.

8 And so if you're changing that out now  
9 we're going to say that needs to comply with the  
10 new construction requirements, because you don't  
11 really have an historical feature there.

12 MR. CRAIGO: In California the  
13 prevailing code for qualified historic buildings  
14 -- and this includes buildings on the national  
15 register and our local registers or possibly in  
16 surveys as the California historic building code  
17 -- and it does exempt qualified historic buildings  
18 from energy conservation regulations.

19 Although, as a practice, our office  
20 always promotes sort of passive possibilities of  
21 increasing conservation in both residential and  
22 commercial buildings. You're right, and how do we  
23 improve those historic buildings and still  
24 maintain the character defining elements of the  
25 historic building?

1           But we have residential and commercial  
2   districts as well. And we look at the interior  
3   historic fabric as well as exterior fabric. So it  
4   is a dilemma, and we are very interested in  
5   working with all of you today and in the future  
6   with AB 549 on how we address qualified historic  
7   buildings in California.

8           MR. BORSTING: Eric Borsting. I  
9   remember probably six years ago the city of San  
10   Diego re-did their zoning code. And as I  
11   remember, any residence built before 1949 was  
12   historic. So there may be some local twist to  
13   this you might want to check.

14           Don't quote me on the '49. At the time  
15   I remember 49 because I became historic then, but  
16   I think it was around 1948, '48, somewhere around  
17   there, 1950. So you might want to check locally  
18   how historic is defined.

19           MR. CRAIGO: Let me add real quickly.  
20   Usually 50 years is used as the cutoff date, but  
21   we're getting right now into the 1950's and into  
22   the 1960's for buildings placed on the national  
23   register, so we're pushing it.

24           MR. CENICEROS: Okay, we have time for a  
25   few more comments here before we have to move on

1 to non-res. Dave?

2 MR. WARE: Dave Ware with Owens Corning.

3 Some of the things that have been talked about.

4 Individual measures, combinations of regulatory

5 and other incentive things. An idea that dealing

6 with how do you catalog the kinds of things that

7 go on throughout time with a building.

8 You might want to explore looking at

9 requirements to the actual deed that runs with the

10 ownership with the home. I know that Department

11 of Real Estate and real estate agencies in general

12 and builders don't like that -- it's time, it's

13 money, etc. etc.

14 But the point here is somewhat different

15 and much more altruistic than just making money.

16 And having that information captured into the deed

17 then provides a hard copy of documentation of the

18 kinds of measures that are in that house, either

19 new or at the time of point of sale.

20 I'll give you an example. The new

21 building standards require that there's a

22 homeowners manual provided, presumably to the new

23 owner/purchaser of that home. I don't think the

24 Energy Commission knows how well that requirement

25 so to speak is really distributed by the building

1 industry to new homeowners.

2 But if that mechanism could be looked at  
3 in the context of the day that new home is sold it  
4 becomes an existing home, and therefore is in the  
5 purview of this activity, then that homeowners  
6 manual could be looked at as being part of the  
7 title in the deed of the home.

8 Related to that concept that I'm  
9 proposing that the group looks at, there's an  
10 organization of homeowners associations, and many  
11 homes -- particularly town homes -- town homes in  
12 a multi-family context or in a single family  
13 context, have very specific CC&R's about what goes  
14 on within the purview of that homeowners  
15 association.

16 Whenever there is a sale of property  
17 within that homeowners association the new  
18 purchase has a title report that describes all the  
19 CC&R's that that new purchaser must abide by.

20 And it's possible that, you know, this  
21 group could explore ways -- at least through the  
22 context of the homeowners association -- where  
23 potential new measures or existing measures that  
24 have gone on with that home in the purview of the  
25 CC&R's for that specific homeowners association

1     could be tracked and catalogued.

2             So, anyway, I'm suggesting that you look  
3     at the ability to use the title in deeds of  
4     records for home ownership as a mechanism to track  
5     things, and to push that market into greater  
6     efficiency.

7             MR. CENICEROS:  Thank you, Dave.  
8     There's time for one or two more comments here.

9             MR. CONLON:  Tom Conlon with Energy  
10    Checkup, a service of GeoPraxis.  We've been  
11    working with home inspectors here in California  
12    for a number of years, and I want to make a few  
13    comments about the nature of this proceeding and  
14    how it proposes to work in either some voluntary  
15    manner and some mandatory manner.

16            And based on our experience working with  
17    this community focused on the time of sale market  
18    event, we believe it's important for this  
19    proceeding to pay particular attention to the fact  
20    that, at this point in time, home inspection is  
21    not a mandatory requirement here in California.

22            In fact, it does appear to happen on  
23    about 82 percent of the properties that are  
24    transacted, but it is in fact not mandatory as  
25    inspection of new buildings is mandatory.



1           And so I would encourage that, as people  
2   begin to pay attention or propose policy invasions  
3   that would impact the time of sale market event,  
4   that that fundamental fact is taken very  
5   seriously, and we don't spend a lot of time  
6   proposing mandatory activities which simply don't  
7   have a political possibility of being brought into  
8   being.

9           That said, I think it is important to  
10  acknowledge that the time of sale market event is  
11  an extremely important target -- the term I think  
12  you're using is target? trigger -- trigger point,  
13  we fully concur with that. And believe there is a  
14  strong need for market programs and a complete  
15  strategy that does move energy efficiency  
16  potential of existing buildings alone.

17          And so I would simply submit that  
18  there's an urgent, frankly there is an urgent need  
19  to attend to the kinds of market advancements that  
20  our group, for example, has been making with home  
21  inspectors in the state.

22          And ensure that the accomplishments of  
23  training some over 300 home inspectors in the  
24  state -- the report has been built with those  
25  practitioners -- is not undermined by this

1 proceeding or by simply the ups and downs right  
2 now of local program utility-administered energy  
3 efficiency market programs. Thank you for the  
4 opportunity to comment.

5 MR. CENICEROS: Thank you, Tom. And  
6 this is a good reminder to anyone else who knows  
7 of activities out there, either a third party  
8 program with PGC funds or purely private driven  
9 activities out there, we want to know about those.

10 What's going on out there, what's being  
11 successful, so we don't run roughshod over those  
12 kinds of efforts. So please let us know what's  
13 going on with things you think we may not be aware  
14 of during this project. Yes, sir.

15 MR. KNIGHT: I'm Bob Knight of BKI,  
16 Bevilaqua Knight. One of my jobs lately, and  
17 following up on your comment just now, is to run a  
18 third party program in residential retrofit home  
19 performance contracting. In which we're training  
20 contractors and trying to build a market in a  
21 couple of cities in the state.

22 And this response to the historic  
23 preservation question, and a number of other  
24 comments that I've heard this morning -- I'll have  
25 more to say about our program this afternoon --

1 but it's possible that, in focusing so much on  
2 just energy efficiency that we're missing a really  
3 important element of market potential.

4           We're finding that we are selling very  
5 expensive jobs in this program that really can't  
6 be justified totally by energy savings, but people  
7 are buying them anyway because they want these  
8 improvements to their homes for other reasons.

9           And for the historic preservation issue.  
10 There are so many benefits to a comprehensive home  
11 performance analysis and retrofit that don't have  
12 anything to do with energy efficiency or don't  
13 require payback in just energy savings that you  
14 could easily justify doing these projects on  
15 historic buildings, because of the other benefits  
16 in terms of everything from personal safety to  
17 integrity of the structure, longevity of the  
18 value, and so forth, as well as comfort.

19           So I just wanted to make that point in  
20 general, that there's a lot more to this than  
21 energy efficiency, and we ought to be thinking  
22 about that. The other thing I will say very  
23 quickly is that contractors need training  
24 tremendously to do this kind of work and to do  
25 things right.

1           The main problem we're seeing is a  
2   terrific level of badly built homes, badly done  
3   remodelings and so forth. So that we find huge  
4   potential for energy savings, far beyond any  
5   averages that you have seen quoted.

6           This weekend -- I took a look at the  
7   first eight homes that we did diagnoses on -- our  
8   average projected energy savings for jobs that we  
9   have sold, jobs that are now being done, is 8,000  
10   kilowatt hours per year and 265 therms of gas.  
11   That's the savings, that's the annual savings of  
12   those jobs.

13           So there's a huge potential for energy  
14   savings in the retrofit home market that I think  
15   go beyond most people's expectations, and it's  
16   mainly because there are so many homes out there  
17   that are real clinkers. Far worse energy  
18   performance than published averages would lead you  
19   to believe. There's an awful lot of it. Thanks.

20           MR. CENICEROS: Thank you, Bob. And  
21   just one comment about that. I think if you were  
22   to look at each of the trigger events that were  
23   mentioned in Lynn's presentation you'd see that  
24   most of those replacements that would happen, and  
25   upgrades, wouldn't be justified based on

1 efficiency alone.

2           If you did it prior to the appliance  
3 failing, or other things happening in the  
4 building, the building being sold. I think what's  
5 unique about the program that you described to us,  
6 Bob, is that it's a different kind of trigger  
7 there that is causing the homeowner to all of a  
8 sudden realize that there's another service that  
9 they might need that they maybe didn't know about.

10           And that is maybe it's a comfort problem  
11 or a moisture problem or something that they  
12 didn't know they could even solve. And here they  
13 find out that somebody actually has a means to  
14 possibly solve those problems.

15           And we need to make sure we look at the  
16 whole house issues as well as the individual  
17 component, that is the kind of trigger events.  
18 And we have time for two more comments here, and  
19 then we're going to have to move on to non-res,  
20 unless you wanted to carry it over until the  
21 afternoon.

22           And there will be the opportunity to  
23 submit comments in writing to us by e-mail or  
24 however else you want, so keep that in mind.

25 There is also a session this afternoon to kind of

1 go over just general comments and suggestions that  
2 you weren't able to get out during these more  
3 focused sessions.

4 So, two more comments here. Did you  
5 want to follow on to that last one, Doug, or --?  
6 Okay. We'll go with you and then Doug.

7 MR. ROBINSON: Dave Robinson.  
8 Renaissance Total Comfort Systems. I thought I'd  
9 jump in right here because I am one of the  
10 contractors that's being trained by the program  
11 that Bob just described.

12 And I can tell you that there is a  
13 tremendous amount of energy to be saved, I think  
14 about half, but it's not just going to save  
15 itself. And it's a pretty big jump from where  
16 most of us contractors are to being able to  
17 provide the full service.

18 The full service has got to be  
19 performance-driven, and it can't be just write a  
20 new specification -- "well, we had R19 in the  
21 attic, so let's jump it up to R38 and that'll fix  
22 it." It really won't.

23 So it takes all the diagnostic equipment  
24 that we know about -- blower doors and duck  
25 blasters and monoxers -- as well as the

1 computerized analysis and output to the customer.

2 So it's truly market transformation.

3 You've got the public that has this big inertia of

4 "well, it's always been okay, yeah I got

5 insulation in my attic." And they don't get off

6 of dead center very easily.

7 And then you've got us contractors. And

8 our problem is that we're trying to make payroll,

9 you know, we're scrambling and fighting off

10 insurance increase rates and litigations and

11 employee issues. And we're pretty busy as it is.

12 The program that Bob described has given

13 some excellent training to a few contractors, and

14 I've been one of them. I'll tell you the results

15 that we've had so far.

16 We went through some training and our

17 guys -- we got 15 leads from the marketing that we

18 did as well. And we sold five of them, five are

19 duds, and five are still waiting to see what

20 happens. Our size of contract has doubled, and

21 our closing rate has doubled as well.

22 And we expect that to continue. So the

23 points that I would say is that it's a great

24 program but it's not a small task. It can't just

25 happen in a short amount of time. You've got a

1 big, ignorant market and you've got a pretty big  
2 ignorant bunch of contractors of which I'm -- I'm  
3 just getting religion.

4           It's not that I've been unaware. I've  
5 had a blower door for ten years. But one of the  
6 things from the trenches that I can tell you is  
7 that nothing happens until somebody sells  
8 something. And with the market unable to believe  
9 that they really should turn loose of 8 or 9 or 15  
10 or 30 thousand dollars to do this thing, it's been  
11 difficult.

12           But now we're selling that. I'll end  
13 with one story. Previously the marketing that we  
14 did -- envision the courtroom. Like if this was  
15 the courtroom we'd have over there the judge, we'd  
16 have the bailiff, we might have the janitor. And  
17 we've got the guys in the orange suits.

18           And previously we had sold the bailiff  
19 and the janitor. Actually this is a true story.  
20 The first two contracts that we sold in the  
21 building performance program was the owner of the  
22 largest lawyer store in our town, and a superior  
23 court judge. And the first sale was \$33,000.

24           And when the lawyer's wife found out  
25 that this was also going to impact the allergy and



1     asthma of her children she didn't even ask the  
2     price.  She said "honey, we want this."  And so it  
3     bears out the point that Bob said -- other reasons  
4     besides energy savings.

5             And I will close with the idea that it  
6     must be performance-driven.  Later this  
7     afternoon -- I brought some photos of two things.  
8     That house -- and you can see the horrible things  
9     that are there and where the BTU's are just flying  
10    around the house.

11            And I also took a little field trip into  
12    some new construction in the most expensive being  
13    build today, and it will show you that just  
14    writing a spec is not going to solve it, because  
15    these houses that are being built to Title 24 have  
16    got tremendous leaks in them.

17            So, anyway, I would just speak for  
18    having something be performance-driven, and if you  
19    like I can show you some pictures this afternoon.  
20    Thank you.

21            MR. CENICEROS:  Thank you, Mr. Robinson.  
22    Doug?

23            MR. MAHONE:  I wanted to throw out one  
24    other subject that we've been batting around.  A  
25    lot of the discussion today has been focusing on

1 the hard efficiency, the rate at which a building  
2 or its equipment uses energy.

3 But the other thing that affects energy  
4 is the time of use and how much it is used. And  
5 that's really where the area of controls come in.  
6 Controls have typically been left off the table  
7 for a lot of energy code stuff because they're  
8 viewed as sort of an extension of the behavioral  
9 aspects of the building.

10 You can't control how the occupants  
11 behave, and the feeling has been you can't control  
12 how the controls behave as well. But for existing  
13 buildings it's often much more expensive to change  
14 out the equipment than it is just to control the  
15 equipment properly.

16 So there may be a big gap here in  
17 figuring out ways to get the controls to behave  
18 the way we expect them to behave to get the  
19 controls to operate reliably, and that may end up  
20 being very cost-effective way to reduce the  
21 efficiency of a lot of older equipment, rather  
22 than going to the major expense of replacing the  
23 equipment itself.

24 So it's an idea we're batting around.

25 MR. CENICEROS: Thank you, Doug. We've

1 had a suggestion here to not attempt to squeeze in  
2 the presentation and discussion on commercial  
3 market characterization and potential prior to the  
4 lunch break.

5 So we don't need to go along, but we'll  
6 need to start with that discussion after lunch, if  
7 you all would like to continue talking about  
8 residential a little longer.

9 Do we have more comments about  
10 residential? Could I see a show of hands? One,  
11 two, anybody else? Why don't we go ahead and do  
12 that and maybe we can break for lunch a little bit  
13 early then. I know my stomach's already growling,  
14 I don't know about the rest of you. So, let's  
15 see, who over here wanted to speak? Eric, please.

16 MR. BORSTING: Eric Borsting. One area  
17 that I think you've got to focus on is the point  
18 when all this happens. You're going to have the  
19 realtors, you're going to have AARP, you're going  
20 to have a lot of people opposing this unless you  
21 can pull them into the group here and figure out  
22 when -- when whatever we decide, happens.

23 Because if you come up with all these  
24 features and all these things that are going to do  
25 good, and you can't get buy-in on when it happens,

1     you haven't gotten anywhere. And to me that's the  
2     critical turning point on this whole process of  
3     how do you get buy-in from people that are going  
4     to oppose you?

5             Because there's a lot of opposition out  
6     there. It costs money, and they don't want to pay  
7     more. So I'm hoping this is high up on the list  
8     of items that we look at versus okay, it's a set-  
9     back thermostat, we need to figure out how to get  
10    them into all houses.

11            Which would be a great thing, very cost-  
12    effective, but if you can't get buy-in -- if the  
13    realtors are opposing you and everybody else is  
14    opposing you, you aren't going to get it. Just a  
15    comment.

16            MR. CENICEROS: Good comment. It seems  
17    that those people tend to come into the process at  
18    the very end, after you've done all this ground  
19    work, and --

20            MR. BORSTING: I don't think any are  
21    here, are they?

22            MR. CENICEROS: I don't know if any are  
23    here. Maybe we have to take the show to them and  
24    get on some agendas or something, it's --

25            MR. BORSTING: Or maybe it's a more

1 formal invitation to them.

2 MR. CENICEROS: Well, we can do that.  
3 John, how did you deal with that in Seattle?

4 MR. HOGAN: The requirements that we  
5 have are all regulatory requirements. The ones  
6 that are not regulatory are run through utility  
7 incentive programs generally. We don't have any  
8 time of sale requirements or things like that.

9 BOMA and other folks are certainly  
10 active participants in all of our process, so --.

11 MR. CENICEROS: Yes, sir.

12 MR. PETERSON: I'm Dave Peterson, and  
13 Rated Energy Plus is the name of my company. I do  
14 energy ratings for the energy efficient mortgage  
15 program. And that's at the time of sale, and you  
16 kind of, Eric, triggered a real interesting point  
17 in the process.

18 I deal with realtors and lenders every  
19 day, and there's a lot of ongoing discussion  
20 about, if you will, kaboshing the deal. And I'm  
21 sure from the home inspectors point of view it's  
22 like they're kind of looked at as a necessary  
23 evil.

24 And I think the energy efficient  
25 mortgage program is a real good program for first-

1 time home buyers especially, because it's an  
2 excellent opportunity for people purchasing a home  
3 not to have an outlay of money that they can't  
4 afford.

5 Dave mentioned about \$33,000 for a job.  
6 There's a lot of things you can do to a home. And  
7 the loan programs, the HFA, VA, the conventionals,  
8 Freddy Mac, have loan limits. So you cannot  
9 always do everything you need to do for a home.  
10 And we run into that all the time.

11 And so we try and maximize that effort  
12 along with the contractor's performing group. I  
13 think looking at the shell of the house is the key  
14 critical analysis along with the duct ceiling.

15 And so I think as we go down this road a  
16 little bit a lot needs to be looked in that area  
17 in terms of how we break some of those issues with  
18 the board of realtors and that group in that  
19 it's -- you know, maybe if we say this enough over  
20 and over, that everything's okay, that it's a good  
21 program, that maybe that starts to take place.

22 We say, sort of kiddingly, I've been  
23 doing this for ten years -- so the group I work  
24 with, when we go see lenders, we call it the turbo  
25 escrow, doing the energy efficient mortgage

1 program.

2 Because we want to put a positive slant,  
3 you know, because it always comes up "well, it  
4 might slow the deal up." And we want to get away  
5 from that, from some of that negative issues on  
6 that. So, thank you.

7 MR. CENICEROS: Thank you, David.

8 MR. CONLON: Tom Conlon with Energy  
9 Checkup. I just wanted to follow up on Eric's  
10 cogent point. Obviously we also work with  
11 realtors. And I want to remind everyone that CAR  
12 did support AB 549, and is monitoring this  
13 process.

14 And I've been working with the home  
15 inspector organization to ensure that this process  
16 helps them meet their needs as well. And so, I  
17 would argue that they are involved in the process,  
18 and that it should be, we should make extra effort  
19 perhaps to reach out to those constituencies, as  
20 Eric mentioned, to be sure that their needs are --  
21 they are important stakeholders in this process.

22 And just to underscore that point.

23 Thank you.

24 MS. BENNINGFIELD: Can I ask you a  
25 question on that? To what do you attribute the 85

1 percent saturation of the use of home inspectors  
2 even though there's no mandates?

3 MR. CONLON: My understanding is that  
4 most realtors do recommend a home inspection. And  
5 the main reason for that is to allow them to meet  
6 the mandatory seller and realtor disclosure laws  
7 that are in place. Home inspectors assist them in  
8 that process.

9 The definition of who is a home  
10 inspector is specified in law, and there is  
11 pending legislation in California, SB 31, which I  
12 believe has just been voted down in committee but  
13 sent back for redrafting.

14 And there's some interesting discussions  
15 going on right now about exactly whether home  
16 inspectors would be certified or not. Right now  
17 there's no definition of a certified inspector in  
18 California.

19 And so, to the extent that this process  
20 can become educated to these other important  
21 legislation that's also impacting the time of sale  
22 market event, I believe that will help structure a  
23 very effective strategy to achieve the goals of  
24 this report as well. Thank you.

25 MR. ROBINSON: I could say something



1 about that, on the home inspector situation. I  
2 got called on to be a home inspector, actually the  
3 second re-move last week. A regular home  
4 inspector had done an inspection, and the couple  
5 that was buying noticed something in there.

6 He said that the air conditioner did not  
7 bring the home down to temperature. So, being an  
8 air conditioning contractor in was called in and  
9 asked for an opinion. And so this was just -- it  
10 was not regulatory, it was not part of the law, it  
11 was just due diligence on the part of the buyer.

12 But something interesting -- I'll just  
13 give the stats -- 1,500 foot house, four ton air  
14 conditioner, oversized already. I arrived at 95  
15 ambient, the house was at 80. After almost an  
16 hour the house had gone up to 81.

17 You can see that just throwing more  
18 tonnage at it is not going to solve the problem.  
19 And so what was just said, the duct work, the duct  
20 ceiling, the charge being correct, as well as the  
21 various insulation things really need to all go  
22 together.

23 The house works as a system, and so only  
24 when you go with the performance-based look are  
25 you really going to get what is going to solve

1     that particular house's problems.

2                 MR. CENICEROS:  Thank you, Dave.  Yes,  
3     John.

4                 MR. HOGAN:  I'd just like to make one  
5     more comment about the notion of thinking beyond  
6     energy efficiency when you look at these programs.

7                 The incentive programs that were  
8     referred to earlier, there's been a lot of focus  
9     in the Seattle area on new construction and multi-  
10    family rather than single family.  We have about  
11    500 single family houses, 3,000 multi-family units  
12    each year, so the focus is on multi-family.

13                We have a public utility, Seattle City  
14    Light.  I think their estimate is they've reached  
15    90 to 95 percent of the multi-family units in new  
16    construction.  They were running their program.  
17    We also had the water utility running a water  
18    efficiency program.

19                The city council told them to work  
20    together and have one program.  What they found in  
21    setting up that program was that people were very  
22    interested in green buildings.  And so now they  
23    have expanded the scope.  It's one program that  
24    addresses energy efficiency and water efficiency  
25    but also green buildings too.

1           So I think that's a way to possibly draw  
2 more people in here, if you look at the overall  
3 green building approach, and not just try and look  
4 at energy savings alone.

5           MR. CENICEROS: Thank you, John.  
6 Comments about residential potential? Any  
7 comments from the conference call line. Ed, are  
8 you still out there? Okay, new comments?

9           MR. DAY: Michael Day with Rockwood  
10 Consulting. One last quick comment to take a look  
11 at would be having to do with ventilation. Those  
12 of us who are watching proceedings, it looks like  
13 ASHRAE 62 is about as -- it doesn't look like we  
14 have a standard today and we haven't had a  
15 standard for a couple of years that seems  
16 workable.

17           But a large portion of the current  
18 standard for ventilation in California comes from  
19 ASHRAE 62, and revolves around infiltration into  
20 the home.

21           There are assumed rates of infiltration  
22 for homes. Older homes, typically, have very good  
23 ventilation. It's not great for energy  
24 efficiency, but it does serve a purpose in terms  
25 of the ventilation rate that comes into the home.

1           New construction homes -- a recent  
2   survey at Bugler showed that 85 percent of them  
3   were in the plus or minus .2 SLA at 2.4. If we're  
4   not taking into account the tightness of new  
5   construction housing and assuming that it's just  
6   the old version of leakiness of the homes, then  
7   ventilation will continue to be inadequate, or it  
8   may be.

9           And it's just a consideration that if we  
10  go tightening up these old homes and people are no  
11  longer operating windows in the way that they  
12  were, we could have some wonderful benefits in  
13  terms of energy efficiency. But we do need to  
14  take into account the fact that the leakiness of  
15  that home was an assumed part of the ventilation  
16  rate when that home was built.

17           MR. CENICEROS: Thank you for your  
18  comments. Any last comments here before we break  
19  for lunch, about residential?

20           MR. DAY: From the contractor's point of  
21  view we definitely don't want to kill people with  
22  carbon monoxide. And as we start tightening up  
23  homes, the way our salespeople are telling the  
24  customer is we're going to save you a dollar on  
25  energy conservation, we need to spend ten cents of

1     it back to stay safe with ventilation. And that  
2     needs to be in the mix.

3             MR. CENICEROS: Great. Well, if there  
4     are no other comments here we're going to go ahead  
5     and break early for lunch. We will resume at 1:25  
6     with a presentation on commercial market  
7     characterization and potential, and a discussion  
8     about that.

9             Fortunately we did leave a little extra  
10    time in the afternoon on the agenda to make up  
11    here. And if, again, if you want suggestions for  
12    places to eat come talk to one of us. Or the  
13    snack bar is right up the stairs there. And so  
14    now we'll sign off until 1:25.

15    (Off the record.)

16            MR. CENICEROS: We're going to get  
17    started again. Do we have anyone on the  
18    conference call? I'm sorry, could you speak up  
19    please?

20            MR. GRAY: Ed Gray from MEMA, I'm on  
21    here again.

22            MR. RIEDEL: Also those of you who are  
23    calling in on the conference call, if you do have  
24    a mute capability on your phone please put it on  
25    mute during your listening, and if you do

1 participate then of course you can take it off.

2 Thank you.

3 MR. CENICEROS: And please feel free if  
4 you're on a conference call to just jump on in  
5 during the discussion section, otherwise we won't  
6 know you need to talk. So let us know when you  
7 want to say something.

8 Okay, we had a great discussion this  
9 morning about residential market characterization  
10 and opportunities. Right now we're going to have  
11 a presentation by Lynn Benningfield of Heschong  
12 Mahone Group to talk about the commercial market.

13 And then we'll have a short discussion  
14 again about the characterization and  
15 opportunities.

16 And then we'll move on to what may  
17 interest some of you a little bit more, a broader  
18 discussion on both res and non-res markets in  
19 terms of specific implementation strategies to  
20 take advantage of those opportunities that we've  
21 been talking about, and will talk about for non-  
22 res in the next hour or so. So, go ahead Lynn.

23 MS.BENNINGFIELD: Thank you. This  
24 section of the presentation is a little shorter  
25 because the commercial building stock is

1 characterized by occupancy to a higher degree. So  
2 we're right now classified in these broad  
3 categories, but we haven't broken it down further  
4 than this, so it's kind of a snapshot picture of  
5 the commercial market right now.

6 This first slide is commercial floor  
7 stock area. And we've divided it by occupancy  
8 type and by area in square feet. And that's the  
9 difference between the res and the non-res. Most  
10 of the res data is by unit, by dwelling unit, and  
11 this is by floor area.

12 And the two different colored bars  
13 represent the construction that is pre-'78 and  
14 post-'78. So you can see that there is quite a  
15 bit of older stock out there that hasn't  
16 officially been touched by building energy  
17 efficiency standards.

18 And this is looking at the resale in  
19 kind of the same way. The year of sale and the  
20 area are shown at the axes. And then we have two  
21 different color bars, again, to show the vintage.  
22 So, in 2001 for example, there was 46 percent of  
23 the resales were of pre-'78 stock.

24 The turnover rate of commercial  
25 buildings is quite a bit slower than res, as you

1 might expect. Still, significant square footage  
2 represented though in 2002 -- 53 million square  
3 feet.

4           The commercial sector is segmented by  
5 occupancy type. A large number of older  
6 buildings. And the resale market is more variable  
7 because there's different kinds of ownership  
8 agreements, and different kinds of occupants.

9           You have the lease lenders, and long-  
10 term and short-term leasing that enters into play.  
11 And again we're looking here at what are the  
12 existing reliable triggers, appliance replacements  
13 and remodels and alterations. Remodels and  
14 alterations are fairly common in the commercial  
15 sector.

16           And the three main mechanisms --  
17 appliance efficiency standards, building energy  
18 efficiency standards and utility -- set up  
19 programs that impact those triggers.

20           And here's our graphic. We're showing  
21 that the lower line is the building efficiency.  
22 It represents the degradation of efficiency of an  
23 existing building. One particular, any particular  
24 commercial building. And then the upper one is  
25 what is the potential if all the programs and



1 triggers were taken advantage of.

2           And then first I wanted to show  
3 lighting. Depending on the occupancy, lighting  
4 models are relatively frequently done as part of  
5 TI's, as part of just renovations -- like in the  
6 retail sector for example -- it's about every  
7 seven years. So that represents about 25 years.

8           And these solid lines again represent  
9 existing opportunities where energy efficiency is  
10 captured by virtue of the standards. Either  
11 building energy efficiency standards or the  
12 appliance standards. And in lighting, for  
13 example, if 50 percent of the fixtures are  
14 replaced the building energy efficiency standards  
15 takes effect for that whole system.

16           This other color arrow and dot shows the  
17 potential triggers we could add in this process,  
18 and again there are others. There are alterations  
19 that are done that might not be touched by  
20 appliance efficiency standards or building energy  
21 efficiency standards or even utility programs.

22           That could potentially be added as a  
23 trigger point. The sale, certainly, of a  
24 building. The lease of a building is a little bit  
25 trickier, but that's also a possible trigger.

1 Again, we see roof replacement as an opportunity.

2 And we don't try to quantify the savings  
3 at this point. We're just saying there is an  
4 improvement potential shown. And this again is  
5 the triggers and opportunities that we've  
6 identified for commercial buildings.

7 On the right hand side shows the kinds  
8 of things that can be looked at, and on the left  
9 hand side it shows when those kinds of things  
10 might be considered.

11 Okay, now we're going to go into our  
12 matrix again. The discussions today will help us  
13 focus our further research, and what we'll try to  
14 do is assign some of these opportunities into  
15 categories, and we'll try and assess their  
16 viability.

17 Now, for example, the appliance  
18 efficiency standards. You can see the red circle  
19 up there because during building commissioning or  
20 retro commissioning, unless you're replacing a  
21 covered appliance you typically won't see any  
22 benefit there. So it's not real viable.

23 However, it's possible that if, say, a  
24 control system were fine-tuned or upgraded, if  
25 there were a set of standards to improve

1 reliability of control systems let's say, those  
2 may come into play. So that's why we're showing  
3 this as very likely.

4 And another example would be a remodel.

5 In some cases the standards do not come into play  
6 at this point. And that could possibly be  
7 expanded in another type of remodel to include  
8 systems that do use energy but are not quite yet  
9 covered.

10 And this is kind of introducing a new  
11 topic -- I don't think we've brought it up yet  
12 today. There are certain things that utilities  
13 can do to prepare for regulatory intervention. Or  
14 there's certain things that can be encouraged by  
15 utilities rather than regulatory intervention.

16 And one of them might be, at the time of  
17 lease when an account is transferred, there is an  
18 interaction between the utility and usually the  
19 lessor and the lessee both. At that point some  
20 offerings could be made, such as let's rate the  
21 building, let's improve the building, let's apply  
22 some cost-effective control strategies.

23 In turn you qualify for this rate, which  
24 may be a dynamic pricing rate because it may be  
25 tied into the controls. It may help the user

1 quantify when they're using the energy and be put  
2 into control of their utility bills.

3 But this is just an illustration of  
4 another kind of trigger point, where the utility  
5 does have contact and there is an opportunity to  
6 look at some kinds of upgrades. I think that's  
7 all I have for commercial. Thanks.

8 MR. CENICEROS: Okay. Just as we do for  
9 residential, we'd like to hear from you as far as  
10 comments and reactions to this characterization of  
11 the non-residential market, keeping in mind the  
12 variety of buildings that are encompassed by non-  
13 residentials.

14 Quite a collection of disparate types of  
15 buildings -- hospitals, schools, office buildings,  
16 etc. Yes?

17 MR. DAY: Michael Day, Rockwood  
18 Consulting. Just sort of a housekeeping question.  
19 Along the lines of some other proceedings going on  
20 here, are you going to be sending a copy of that -  
21 - you said it was in powerpoint -- presentation to  
22 the CEC for including with the 549 documents on  
23 the web page?

24 MR. CENICEROS: They are already on the  
25 web page.

1 MR. DAY: This one is already on it?

2 MS. BENNINGFIELD: Yes. And the report  
3 we issue in a few weeks will be on there also.

4 MR. CENICEROS: And this is probably a  
5 good time to mention that if you have subscribed  
6 to the AB 549 list serve group, which is possible  
7 to do from the AB 549 web page, you will be sent a  
8 notice whenever a new document is posted on the  
9 website -- powerpoint presentations or a new  
10 report or anything like that. As well as being  
11 the first informed about upcoming workshops.

12 Okay, any comments about the commercial  
13 markets or potential commercials? Well, we  
14 thought you'd be a lot more interested in the  
15 residential side, that's why you went a little  
16 longer on that time period. I'm sure some of you  
17 have some commentary actions. Yes, Dave?

18 MR. WARE: Dave Ware with Owens Corning.  
19 It almost sounded, Bruce, like you were going to  
20 move back to residential, but -- so I thought I  
21 better get my comment in on non-residential.

22 The city of Santa Monica actually has a  
23 very active program for commercial buildings, with  
24 a list of efficiency measures that must be  
25 included at the time of any kind of renovation or

1 addition to a commercial facility.

2 And, as we're aware, when commercial  
3 facilities are renovated there's turnover etc.  
4 fairly regularly. And the city of Santa Monica --  
5 I would encourage you to look at their web page  
6 and start there, and I've forgotten where it is --  
7 but they have a very good program targeted at  
8 improving the efficiency in building stock of  
9 commercial building types.

10 MR. CENICEROS: Thanks, Dave.

11 MR. GRAY: This is Ed Gray from NEMA.  
12 We certainly encourage lighting upgrades of  
13 commercial buildings. We see that as one of the  
14 major ways of saving energy. A typical older  
15 commercial building might be using 50 percent of  
16 its energy in lighting, and a newer one maybe 30  
17 percent.

18 So we'd be glad to work with you to try  
19 and identify opportunities to significantly  
20 upgrade the systems with not only new lamps and  
21 electronic ballasts but perhaps luminaires and  
22 controls as well.

23 MR. CENICEROS: Thank you for that  
24 comment, Ed.

25 MR. GRAY: Welcome.

1           MR. GUSTAVSON: Dale Gustavson, Air  
2   Conditioning Contractors of America. Just because  
3   it's a different subject I'd just like to  
4   reiterate the potential trigger point here are  
5   periodic maintenance between independent  
6   contractors and the owners or operators of  
7   commercial office buildings.

8           In my own mind I'm actually asking a  
9   question, because I'm not sure how we create any  
10  regulatory process or mandatory steps that will  
11  disincentivise people from entering into those  
12  agreements. And yet, it's a huge opportunity.

13          On the commercial side most of those  
14  agreements call for four times per year visits,  
15  not just two, which is typical of the residential.

16          MR. CENICEROS: I'm sorry Dale, did you  
17  say business incentives, you're worrying about  
18  regulations that would get in the way of that  
19  process?

20          MR. GUSTAVSON: Yes. I presume that a  
21  maintenance agreement exists, and now there is  
22  some regulation that requires the maintenance  
23  contractor to report a certain condition, or to  
24  improve on an existing condition. It could become  
25  a disincentive in the market for entering

1 contractual relationships for preventive  
2 maintenance.

3 And so I am asking the question. I see  
4 a huge opportunity here, but I'm asking a question  
5 about the mechanism.

6 MS. BENNINGFIELD: Can I ask you, is  
7 there a size or system threshold that typically  
8 dictates whether or not a service agreement is in  
9 place? It can be a two ton system, it can be a  
10 built-up system?

11 MR. GUSTAVSON: The rule of thumb is  
12 that the larger the system the more likely it is  
13 maintained on a regular basis. And then there's  
14 just a question of whether that's being maintained  
15 by a house staff, an independent contractor, or  
16 some combination thereof. On the low side, in my  
17 experience it tends to be determined more by  
18 sector.

19 For instance, restaurants, not known  
20 necessarily as the best maintained systems in the  
21 world, because they tend to have very, very tight  
22 budgets, nonetheless have refrigeration needs that  
23 are high on their radar screen, so they will have  
24 refrigeration and HVAC contractors out  
25 periodically looking.



1           And there you are seeing three ton, four  
2   ton, and five ton packaging. So it's all over the  
3   map.

4           MR. CENICEROS: Any other comments?

5           MR. WARE: Yes. Dave Ware with Owens  
6   Corning, I want to react to that comment because I  
7   think that's a very important comment in  
8   relationship to commercial facilities in  
9   particular because they are almost universally  
10  controlled by building owners.

11           And what drives what is often done or  
12  not done in commercial facilities is the tax  
13  structure, which allows building owners to write  
14  off the energy expenses for those rented spaces.

15           I know in part, my tenure here at the  
16  Energy Commission and some of my work with the  
17  efficiency interests throughout the country, there  
18  are discussions going on with changing the tax  
19  structure, both internally within states and at  
20  the federal level looking at this issue, how can  
21  we do that.

22           Certainly no one wants to -- it seems  
23  very reactionary and people begin to put up fences  
24  when they think about their ability to write off  
25  certain items for their taxes.

1           But there are discussions going on that  
2   are trying to change that and to almost make it an  
3   incentive in some shape, form or fashion, so that  
4   if a building owner does install new items there  
5   is some sort of tax break in the same vein as the  
6   tax break that that owner would get for writing  
7   off the energy expenses.

8           So I think that's a piece of the puzzle  
9   that the group ought to look at very carefully  
10  when it deals with commercial facilities.

11           MR. CENICEROS:  Thanks for that point.  
12  Very good point.  Mike?

13           MR. HODGSON:  Mike Hodgson.  Real  
14  quickly, on small commercial and office space.  
15  Most of the utilities are passed through to the  
16  tenant so the tenant is paying those bills in  
17  either direct pass-through or through a common  
18  area maintenance charge.

19           And in the leases that we're either  
20  involved with or have some exposure to, all of  
21  them require a quarterly maintenance contract.  So  
22  whether you have a two ton to a seven ton, whether  
23  you're a restaurant or a workout studio or an  
24  office, that's a common requirement in most  
25  leasing right now.

1           MR. CENICEROS: Mike, is that  
2 requirement on the tenants or the owner of the  
3 building?

4           MR. HODGSON: It's a requirement on the  
5 tenants by the owner of the building. The owner's  
6 many times will pay for the equipment but the  
7 tenant must maintain it.

8           MR. GUSTAVSON: Dale Gustafson, ACCA  
9 again. And the reason it's being included is  
10 because the owner does generally pay for and own  
11 the equipment. They want it maintained, so the  
12 cost of maintaining are being passed through to  
13 the tenant, because the owner knows that he's  
14 going to get stuck with a big capital expense.

15          MR. RIEDEL: I have a question for the  
16 audience. Doug brought up a real good point  
17 concerning controls in the residential sector. It  
18 appears to me that controls for optimization of  
19 systems in the commercial sector would be a --  
20 it's a fairly dynamic, ongoing industry is it not?

21               Can people check in on that and help me  
22 out to the degree to where controls are being more  
23 widely dispersed in commercial buildings for  
24 optimization? I know they're doing it for  
25 lighting, is it also being done for HVAC controls?

1           MR. MAHONE: Well, certainly for HVAC  
2 controls at the most basic level you have  
3 programmable thermostats and economizer controls,  
4 both of which are sort of vaguely regulated.

5           I mean, economizer controls are coming  
6 under increasing scrutiny because if they're not  
7 working right there's a big energy penalty. If  
8 they are working right it's a fairly effective  
9 measure. That, to my mind, is actually a pretty  
10 good example.

11           Title 24 encourages economizer controls,  
12 in many cases requires economizer controls, and is  
13 just now waking up to the fact that the controls  
14 actually have to do what you think they are doing.  
15 In many cases they don't do that.

16           And it suggests to me that there's an  
17 opportunity to beef up the definition of what  
18 controls are, and possibly set standards for  
19 controls operations so they can be relied upon.

20           Not only the guy who's paying the  
21 utility bill who's hoping that they operate right,  
22 but so utilities can rely upon them for demand  
23 reduction, and tenants can rely upon them for  
24 comfort and so forth.

25           And of course as you get into more

1 complicated mechanical systems and building  
2 systems the controls get increasingly more  
3 complicated and are becoming increasingly more  
4 commonplace. Again, without much in the way of  
5 standards for how the really ought to operate.

6 MR. CENICEROS: Eric?

7 MR. BORSTING: Eric Borsting. What that  
8 says to me is that here's an opportunity for not  
9 mandating or requiring more things, but here's an  
10 opportunity to educate people on the proper use of  
11 equipment.

12 You have the same thing with the  
13 residential setback thermostat. It's like  
14 programming your VCR, people don't always  
15 understand how to use it. Instead of mandating  
16 that it's there maybe we need to look at  
17 simplifying it or educating the people on how to  
18 use it, so it is used properly, and then by goody  
19 we've had some energy savings and we haven't had  
20 to go into law or anything.

21 MR. CENICEROS: Thank you, Eric. Any  
22 other comments on the subject? Yes, John.

23 MR. HOGAN: John Hogan, city of Seattle.  
24 I wanted to offer some observations on regulatory  
25 approaches. For alterations we talked about the

1 building envelope mechanical a little this morning  
2 in terms of residential buildings and historic  
3 buildings, and I think that covered that ground.

4 In terms of lighting, we have code  
5 requirements that indicate that if you changed 60  
6 percent or more of the lighting fixtures in the  
7 space you need to comply with the installed watts  
8 per square foot the lighting power allows. And if  
9 you're changing less than 60 percent you need to  
10 either maintain or reduce the watts per square  
11 foot, so you're not making things any worse.

12 So, again, it seems this is a situation  
13 where somebody has decided to undertake some  
14 alteration, you're just piggy backing on it and  
15 guiding them to comply with the energy code for  
16 those particular places.

17 In terms of lighting controls we have  
18 requirements if you have an existing office space,  
19 it's open office, you create some new offices by  
20 putting in some new walls or ceiling height  
21 partitions, then you need to comply with our  
22 lighting controls requirements.

23 Which for small offices we require  
24 occupancy sensors as well as a separate switch  
25 within that space. So again it's piggy-backing

1     what's going on there.

2                 As you start to broaden this out a  
3     little bit, if there's a change of space  
4     conditioning, going from unconditioned, such as  
5     unheated, to a heated space, we require that you  
6     comply with the energy code requirements.

7                 So sometimes this might be in the same  
8     use, sometimes it might be a change of use.  
9     Somebody could have a warehouse, for instance, and  
10    you convert it to office, or you convert it to  
11    residential.

12                We do have a couple of specific  
13    requirements for change of use. One is if you  
14    change the use from other than group R occupancy  
15    -- so some non-residential occupancy such as  
16    warehouse -- to residential occupancy, to group R,  
17    then you need to fully comply with the code.

18                This doesn't work both ways. If you go  
19    from group R to other than group R you deal with  
20    everything you touch as an alteration. But if you  
21    go from other than group R to group R you have to  
22    fully bring the building up to the new  
23    construction requirements.

24                We also have a requirement that, when  
25    you change the use from one of the lighting

1 categories to another lighting category you have  
2 to comply with that watts per square foot. So I  
3 think in the energy standards it's table 1-N, the  
4 lighting power allowance tables, and there's 20 or  
5 30 categories in there.

6 If you were to change from retail to  
7 office or something like that, even if you weren't  
8 intending to change the lighting fixtures we have  
9 a trigger that says if you're changing your use  
10 then you must comply with the watts per square  
11 foot.

12 So I think those are some places, in  
13 terms of alterations or use changes, where you  
14 could work with the process that's in place and  
15 get some additional energy savings.

16 MR. CENICEROS: Thank you, John.

17 MR. EILERT: This is Pat Eilert from  
18 PG&E. I have a question for you, John. Earlier,  
19 when you mentioned that you have code which isn't  
20 actually triggered by building permits and so  
21 forth, how does that actually work? Could you  
22 just discuss that a little bit?

23 MR. HOGAN: I don't know what the  
24 thresholds are here for building permits. I think  
25 we have a requirement that says if you're doing



1 less than \$2,500 worth of work you don't need to  
2 get a building permit to do that.

3 The energy code just ties in with the  
4 rest of the permit applications. So there's some  
5 minor or small thresholds where people don't need  
6 to do the work.

7 In terms of things like replacement  
8 windows, a lot of that work goes through a utility  
9 incentive program. So even though there is not a  
10 permit and we are not checking that the utilities  
11 are paying out money and so they're making sure  
12 they're getting what they want installed. So  
13 where there's utility money, those things occur.

14 But again, the threshold isn't so high  
15 that the things we're missing out on I think are  
16 smaller things. And I think there's also a  
17 mistaken assumption that if you're not getting a  
18 permit you're not doing plan review and you're not  
19 doing inspections and you're not getting any of  
20 the savings.

21 And I think that's a fallacy. Because I  
22 think there's architects and engineers and  
23 contractors out there who know they have some  
24 responsibilities for doing things, and know what  
25 the laws are even if they don't have to go through

1 a process where you're verifying that you're  
2 following them.

3 And I also think that, to the extent  
4 that some of the things end up in the standards,  
5 it might be more difficult for people to find some  
6 non-complying products. You know, you set up  
7 appliance efficiency standards it's probably  
8 difficult to find appliances in California that  
9 don't comply with the appliance efficiency  
10 standards.

11 So even if you never pulled a permit for  
12 it, and nobody ever checked, you may well have  
13 that. Now, those are simpler things. There's  
14 more complex things about how well the ducts are  
15 sealed and stuff like that. You know, all bets  
16 are off on what's happening with that.

17 MR. CENICEROS: John, may I ask if you  
18 have had any kinds of compliance surveys with the  
19 requirements that don't require, requirements for  
20 changes in the building that don't require  
21 building permits versus those that do?

22 MR. HOGAN: I'm not aware of any of  
23 those. The Northwest Power Planning Council has  
24 the range for compliance surveys to be done in  
25 northwest states for energy code compliance for

1 both residential and non-residential buildings,  
2 but I don't recall them identifying that sub-  
3 sector.

4 MS. BENNINGFIELD: Can I ask a question?  
5 Sounds like if you change your occupancy without  
6 intending to change the lights, you're forced to  
7 do an alteration on your lighting system?

8 MR. HOGAN: Correct.

9 MS. BENNINGFIELD: So how did this 60  
10 percent threshold come in for cases where you're  
11 not changing occupancy? Is there justification  
12 for a lower threshold?

13 MR. HOGAN: The notion was to pick a  
14 threshold where nobody's at that threshold. So  
15 it's sort of what ASHRAE's tried to do with the  
16 economizer thresholds. You know, you can get four  
17 ton equipment and five ton equipment, so you pick  
18 a threshold that's halfway in-between, where  
19 nobody is.

20 And I think the notion was, for people  
21 who were remodeling a quarter of the space of  
22 something smaller, they're really doing 90  
23 percent. So you pick 60 because nobody's really  
24 close to that threshold.

25 Practically, I don't think there's much

1     between 50 and 80 or 90 percent. The problem we  
2     had is, there are people who will remodel the  
3     entire floor and leave the lighting in the  
4     restrooms so that they haven't remodeled  
5     everything.

6             So if you said you were remodeling  
7     everything -- that was the trigger -- then it  
8     wouldn't happen. You've got to have something  
9     lower than a total remodel.

10            MR. CENICEROS: Yes, Doug?

11            MR. BEAMAN: Doug Beaman. In our  
12     current code it's 50 percent, so in California  
13     we're actually on a lower threshold than that.

14            MS. BENNINGFIELD: Yes. But what I was  
15     getting at was, we could look at 30 or 25 or  
16     something along those lines.

17            MR. BEAMAN: I see.

18            MR. KNIGHT: It's Bob Knight again with  
19     BKI. Just a word on behalf of the PEER lighting  
20     and research program. My companies in charge of  
21     the commercialization aspects of that program.  
22     That's \$6 million worth of R&D on a whole bunch of  
23     different lighting products.

24            And very many of those are for the  
25     retrofit commercial market. And what we're seeing

1 in that program -- not just with the products that  
2 are being developed, but with their competitors  
3 out in the field, is that technology is moving  
4 reasonably fast, as we speak.

5           So the standards themselves, over the  
6 next several years, are going to have room to  
7 tighten up, for retrofit as well as new  
8 construction. There's a whole variety of  
9 products, very interesting things, coming out of  
10 that group over the next year. Some of which will  
11 actually be in the market within the next few  
12 months.

13           And there are many other things outside  
14 the program, of course. Everything from lighting  
15 controls, various kinds of lighting controls,  
16 different kinds of occupancy sensors, some  
17 protocols for control systems, the dolly (sp) and  
18 so forth.

19           And all of those are going to give you  
20 some room to take another look at the lighting  
21 standards. For example, someone's recently come  
22 up with a very high reflectance material for  
23 troffer light systems.

24           And that has made it possible to light a  
25 classroom to perfectly appropriate standards at

1 less than .8 watts per square foot, just because  
2 of this 96 percent reflectance material that is  
3 actually affordable as well as highly reflective.  
4 And some kind of interesting tricks in design.

5 And that same product is going to find  
6 it's way into the office market and the mass  
7 market. So I just want to make the point that  
8 technology is something you should really be  
9 looking hard at for the way new things are going to  
10 be coming into the market over the next year or  
11 two.

12 MR. CENICEROS: Thank you, Bob. Jim?

13 MR. FLANAGAN: I'm Jim Flanagan with  
14 Quantum Energy Services and Technologies, and I  
15 want to talk a little bit about our retro  
16 commissioning. We're running a local program in  
17 Oakland.

18 It's a \$6 million program, and our  
19 biggest component in that program is a retro  
20 commissioning project that's funded with about  
21 \$1.8 million. One of the things I wanted to point  
22 out is that retro commissioning kind of falls  
23 under the radar.

24 Some of these energy potential studies  
25 are almost impossible to quantify, and not a lot

1 of people can say a lot about persistence in the  
2 measures. You get a loan, it doesn't exactly list  
3 what they are, because they're a little bit  
4 confusing.

5 Our program has a four megawatt goal, 12  
6 gigawatt hours -- this is just for the  
7 commissioning part. It comes in at about \$380 per  
8 kilowatt on the program side.

9 We're looking to sign ten million square  
10 feet in Oakland. We've already signed about five  
11 million, so we're having great success in a slow  
12 economy, in my opinion. And as I said before, I'm  
13 kind of concerned this is to be one of the  
14 invisible potential measures.

15 It doesn't really show up. And some of  
16 our best participants in this program are in well-  
17 run buildings. I mean, I consider Shorenstien and  
18 Grubb and Ellis and some of the big property  
19 owners to have well-run buildings.

20 And we go in and we find usually five,  
21 ten to 15 percent energy savings in these well-run  
22 buildings. They have very little occupant  
23 complaints. They don't have cold spots. They  
24 don't have a lot of problems, but they also have  
25 reduced their engineering staff to the point that

1 they have some on-board engineers that handle  
2 local occupant complaints and changing out filters  
3 and things like that.

4 But no one's going to spend the time  
5 pulling apart a control system, trying to make  
6 some changes, and potentially disabling the whole  
7 system just to find these things. And that's what  
8 we're going into a lot of buildings and we're  
9 finding a lot of stuff. And the measures that  
10 we're finding are usually pretty low cost.

11 Changing sequencing, changing the piping  
12 structure, taking advantage of -- we find a lot of  
13 times that wet side economizers are disabled  
14 because the building engineer didn't know how to  
15 deal with it so he gets rid of him.

16 And it sort of speaks to what Eric was  
17 saying and what Doug was saying. Well, should  
18 these be mandatory measures, should these be  
19 something the state should legislate. And it's  
20 sort of hard to mandate a measure when a building  
21 operator didn't even know it existed, and I think  
22 it's going to be difficult to find that.

23 So I really think that retro  
24 commissioning is a great place for incentives.  
25 And I'm not sure I can stay until the end but I



1 would think that if the Commission -- either the  
2 PUC or the CEC -- was going to put some money into  
3 furthering something like this, it would be into  
4 quantifying some of the savings, shoring up some  
5 of the persistence of the measures, working on  
6 some of the M&V, and then as far as the program  
7 design side, I think a lot of building owners are  
8 reluctant to spend a lot of money tearing apart  
9 their control strategies and retro commissioning  
10 their buildings if it's running fine.

11 So I think putting utility money up  
12 front in the form of building audits and in-depth  
13 commissioning studies takes a lot of the risk out  
14 of the building owners and they almost always find  
15 payback. So, that's kind of my pitch for retro  
16 commissioning in your guy's work. Thank you.

17 MS. BENNINGFIELD: Can I ask a question?  
18 Is there a trigger point that works best for your  
19 opportunity to retro commission buildings?

20 MR. FLANAGAN: There's not a time --  
21 like I said before, these are generally well-run  
22 buildings. So there's not really a point where  
23 someone says "Oh, maybe my building isn't  
24 running."

25 It's more, you know, we knock on their

1 door and say hey, we've got some money to look  
2 into your building.

3 What we do is, we show up with -- if we  
4 get ahold of their building data -- we benchmark  
5 or --. We find more and more of our buildings are  
6 interested in energy star, so we can use that as  
7 an entry point.

8 But it's more, it's generated from  
9 people out in the fields going out to a building.  
10 You know, it's hard to say.

11 MS. BENNINGFIELD: So, I guess,  
12 solicitation?

13 MR. FLANAGAN: Solicitation, yes, that  
14 would probably be it. Thank you.

15 MR. CENICEROS: Thank you, Jim. Mr.  
16 Proctor?

17 MR. PROCTOR: John Proctor, Proctor  
18 Engineering Group. I want to reiterate what Jim  
19 said. Commissioning, I noticed on commissioning,  
20 it didn't seem like commissioning and retro  
21 commissioning didn't seem like it was getting a  
22 lot of play there.

23 And the opportunities that we find on  
24 brand new buildings, let alone ones that have been  
25 around for awhile, are astronomical.

1           The recent studies on economizers was  
2   that -- the few that worked -- most of them were  
3   set on the least energy efficient setting, which  
4   meant basically that they didn't work much at all.

5           And that sort of goes back to one of the  
6   problems. It's both a massive opportunity and  
7   it's a huge problem. And that is that one of the  
8   things that you find is that any time that you  
9   have a system that can be adjusted, it usually is,  
10   and often wrong.

11           So I don't know how to solve that one,  
12   but the opportunity is certainly there.

13           MR. CENICEROS: Thanks, John. Any other  
14   comments about commissioning or retro  
15   commissioning? Doug, and then Dale?

16           MR. MAHONE: A lot of these comments are  
17   sort of reinforcing what some of us have been  
18   thinking, which is that this whole area of  
19   controls is still kind of like the wild, wild  
20   west. You know, anybody can make a control and  
21   any building operator can screw it up by changing  
22   the setting.

23           And if we could somehow make the  
24   controls more reliable, make them behave the way  
25   they're intended to behave, without their

1 requiring, you know, a Ph.D. on a ladder to come  
2 in and tweak it, we might be able to make some  
3 progress in that area.

4 And I think the whole controls around  
5 this moving so quickly, the technology is  
6 advancing, the standards are in flux, that this  
7 whole question of making them reliable and  
8 understandable and dependable keeps getting lost  
9 in the shuffle.

10 But that I think is really the nub of  
11 the problem. As long as you don't have a way of  
12 reliably controlling these buildings without  
13 somebody really smart going in and overseeing them  
14 and revisiting them every three years, the  
15 controls are never going to do what we think they  
16 ought to do.

17 MR. CENICEROS: That might be a good  
18 question for our discussion on strategies a little  
19 bit later this afternoon. Dale?

20 MR. GUSTAVSON: Dale Gustavson, ACCA.  
21 I've just been thinking about what Doug just said.  
22 If we use the example of economizer controls  
23 instead of thermostats on them, in both cases I  
24 think we're talking about controls that are fairly  
25 reliable at this point in our history.

1           And yet we know from every survey that's  
2   done anyplace that the setback thermostats are  
3   probably not set correctly. And we all know the  
4   economizer controls are not working in 75 percent,  
5   85 percent, whatever it happens to be.

6           And this is just another question on the  
7   whole issue of controls, but I'm raising it  
8   relative to the lower levels of sophistication  
9   controls, because I think there are two other  
10   things that are happening in the marketplace that  
11   need to be taken into account as we're looking at  
12   trigger points and as we're brainstorming later in  
13   the afternoon.

14           And that is the relative value of  
15   technology and the value of skill. And whether in  
16   fact when we rely too much on technology and too  
17   much on code what we do is we commoditize and  
18   create barriers to the increasing value of skill.

19           The perceived value of the Ph.D. that  
20   needs to tweak the building control system in the  
21   high rise may be too low. The value of the labor  
22   required to note on a restaurant that an  
23   economizer isn't working correctly, or the ability  
24   to sell the improvement in the economizer, that  
25   value is low in the marketplace.

1           And I think we need to be thinking about  
2   those kinds of issues as well. Everybody wants it  
3   at a lower price, but we, as the community of  
4   interventionists, need to make sure that we don't  
5   allow the quality and the skill sets and the  
6   things that really do have value to make these  
7   work get cut out, and sometimes we do that  
8   accidentally.

9           MR. CENICEROS: Doug?

10          MR. MAHONE: I've got a follow-on  
11   comment to that. I think you're raising a really  
12   interesting point there, Dale. And especially in  
13   the area of controls, because there's so much  
14   difference between controls.

15          So many different ways that they  
16   operate, and so many -- you know, it's like VCR's,  
17   no two of them program the same way. And so the  
18   solution seems to be either you make them easier  
19   to control or else nobody knows how to control  
20   them, or the one person that does know how to  
21   control them is working on some other building  
22   somewhere.

23          The other trend, however, that's in the  
24   marketplace, if you look at automobiles, they are  
25   getting smarter and smarter, so that any idiot can

1 operate them.

2           And the mechanics have to get more  
3 sophisticated when they go wrong, but they go  
4 wrong a lot less often than they used to. I mean,  
5 it used to be that mechanics would rebuild an  
6 alternator if it failed, or rebuild a generator.

7           But now the control system knows when  
8 it's not right, and they seldom fail. The  
9 technology's advanced. And it almost seems to me  
10 that if we can follow that same path with building  
11 controls, so that they get so reliable and so  
12 smart that when they go wrong they either fix  
13 themselves or they tell you how to fix them, we  
14 might be better than we are right now where it's  
15 sort of chaos in the controls world.

16           MR. RIEDEL: I'd like to just followup  
17 and make a comment on your comment, Doug. And  
18 that is that I think the automobile analogy of  
19 controls is really excellent. Because what it  
20 does is real time intervention and corrections to  
21 some performance criteria that they're seeking to  
22 optimize or to hit.

23           And are controls in buildings set up to  
24 do that? I mean, are they set to optimize  
25 environments dealing with, for instance, those

1 characteristics that are most necessary to  
2 optimize our survival in regards to adequate  
3 amounts of oxygen and CO or CO2?

4 Are they there to assist us in regards  
5 to our exposure to not only the temperature and  
6 humidity in the air but the manner in which it's  
7 stacked or stratified? Are they there to assist  
8 in regards to enhancing our exposure to the mean  
9 radiant temperature from heating and cooling  
10 perspectives within our environment?

11 Do they have a performance objective, is  
12 what I'm asking, that's based upon some desired  
13 outcome. There are other outcomes in some places,  
14 where we're conditioning foods, and others have  
15 some other performance objectives.

16 That was more of a statement than a --  
17 it was largely rhetorical.

18 MR. CENICEROS: I think there are  
19 systems that come real close to what you describe  
20 there, but I doubt it's anywhere near a majority  
21 of systems, only in the most sophisticated  
22 building management systems.

23 MR. ROBINSON: You know, if I could just  
24 rabbit trail a little bit on the new car analogy.  
25 I think it's a great analogy, because I, when I



1 first began to drive I could fix my car. Now, I  
2 open up the hood, I say "I ain't going there,"  
3 it's got to go to somebody with a computer.

4 And that's the way some of our more  
5 sophisticated buildings are. You're referring to  
6 the Ph.D. that needs to fix the control thing.  
7 Where that comes down to in my business is, I've  
8 got a choice a lot of times.

9 I can prescribe a pretty standard 12-  
10 SEER HVAC unit, or I can go to like a 19-SEER unit  
11 that has a lot of controls, a lot of fancy stuff  
12 on it, and there's only four guys in my city that  
13 can service it, where there are fifty people that  
14 could service the other one.

15 So, I guess what that's saying to me is  
16 if we do things like tighten up the envelope,  
17 that's the guy who could fix the '68 Chevy with  
18 the crescent wrench. And it isn't going to have  
19 to be maintained, and you're not going to need a  
20 Ph.D. to keep watch on it.

21 And so I think the more of the things  
22 that we do that are like passive like that --  
23 could we do as much low-tech as possible? Because  
24 we're seeing with the economizer control thing,  
25 when we verge into high-tech, and then we don't

1 manage it well, it can be a two-edged sword and  
2 come back and bite us.

3 MR. CENICEROS: Dave, do you mean low-  
4 tech or low complexity?

5 MR. ROBINSON: Low complexity. In the  
6 example that I gave, putting a 12-SEER unit on and  
7 really sealing the ducts and sealing the shell  
8 would, in some cases, be a preferable approach to  
9 putting a really high SEER system that had  
10 complicated controls that few people could work  
11 on.

12 MR. CENICEROS: Thank you for waiting  
13 patiently up there. Go ahead.

14 MR. GUSTAVSON: Dale Gustavson, ACCA.  
15 When we first took this assignment of managing the  
16 California state chapter of ACCA -- and those of  
17 you who don't know me, I'm really in market  
18 transformation so I'm not a professional  
19 association manager, so it was an unusual  
20 opportunity for us.

21 When we first took it, one of the  
22 research projects that I wanted to do did have to  
23 do with auto mechanics and the parallel, and I  
24 haven't been able to, at this point in time I  
25 think it's actually working -- as you're talking

1     you said, you know, any dumb guy can fix it.

2     Well, I'm not sure, I'm not sure if that's true.

3             In fact, I'm wondering if the mechanics  
4     are dumber or smarter. And I'm wondering if they  
5     are lower paid or higher paid. I wonder if there  
6     are increases in or reductions of cutbacks, and  
7     more persistence in repairs. It's a combination  
8     of technology and skill.

9             I'm wondering if in fact the auto  
10    mechanic, whether it's acknowledged in the public  
11    this way or not actually feels better about his  
12    job than he did before. And these intangibles.  
13    And I think it would be worth taking a look at,  
14    and my guess is the information is available  
15    through some association or car dealer.

16            And I think we all assume that the auto  
17    industry set about the business of attracting more  
18    and more repair work back at the dealership, and  
19    my guess is they've succeeded at that. I think  
20    there's probably less work being done at the local  
21    garage than there used to be.

22            And I'm not sure that people are that  
23    dumb. Maybe they've gotten smarter, and that  
24    their likelihoods have improved, and not the other  
25    way around. i'd like to know, and I haven't had

1 time to look.

2 MR. WARE: Dave Ware, Owens Corning. I  
3 think there's some relationship to what I have to  
4 say. And really key to what was mentioned over  
5 here about the gentlemen talking about the PEER  
6 program and some of the innovations in R&D work.  
7 What activities like this, and in the building  
8 standards process, tend to do is they categorize a  
9 laundry list of measures.

10 And if you're not on that list, you're  
11 not recognized. And I would really caution this  
12 group and warn this group to stay away from that.  
13 Begin thinking out of the box and do something  
14 different from what this Commission has done  
15 traditionally in regards to the development of the  
16 energy standards.

17 Make it performance-based, or have some  
18 elements in there, in the structure of this  
19 process, that allows performance-based things to  
20 be used that stimulates the markets, allows new  
21 innovation, and allows the things that are  
22 already, the slug of stuff that's in the PEER  
23 program that may not be online but holds a lot of  
24 process in the development of it, and in the  
25 market transformation of it, to become online and

1 ready to use in 2005 or whenever this process  
2 ends.

3 My company, for instance, has initiated  
4 a program that we have gone out with and are  
5 sharing with other manufacturers of building  
6 materials, not just insulation sort of folks.  
7 It's called Imagine One.

8 And it's predicated on the, taking the  
9 so-called brightest of the brightest of the folks  
10 who are out there in the research and  
11 manufacturing ends of things, and it's challenging  
12 those people, and it's saying imagine one new  
13 building material innovation every 90 days.

14 Now it recognizes that you may not get  
15 it actually manufactured and added to the market  
16 in 90 days, but the challenge is that 90 percent  
17 of that is done in 90 days. We developed, under  
18 the predecessor of this program, two years ago  
19 Owens Corning developed an insulation material  
20 targeted at industrial and co-generation  
21 facilities called vapor wick.

22 And basically it allows the wicking of  
23 the condensation that naturally occurs on steam  
24 piping to get out of that pipe, so you don't have  
25 to change that installation every year or every

1 two years. You don't have to change the piping  
2 every five years or every seven years.

3 We are working with a consortium of  
4 other people. We've already patented it, it's  
5 been marked in R40 per inch insulation. This  
6 group is developing thermal energy storage  
7 systems.

8 Our company is pioneering, under this  
9 program, Imagine One, shared with other  
10 manufacturers, is developing a membrane that can  
11 be used for spray insulation systems, and it  
12 changes color when the correct density is there.

13 The group as a whole is looking at  
14 development of smart vapor returns. So my point  
15 here is there's a whole slug of things that really  
16 cool people are looking at and thinking about that  
17 can have a lot of impact in this process.

18 And I encourage the group to consider  
19 performance-based things around whatever's  
20 developed in this process, and allow this slug of  
21 stuff to be used and incorporated in the process  
22 of this.

23 Otherwise we'll end up with, like the  
24 building standards tend to do, which says I can't  
25 look at that new widget, you'd have to use our

1 compliance option process, that means a whole  
2 different group is going to look at it, and it's  
3 formalized and whatever.

4 Keep an open mind and look at the  
5 performance-based aspects as you develop the  
6 litany of not only measures but a combination of  
7 measures and regulatory and other incentive  
8 programs.

9 MR. CENICEROS: Okay. Dave, sounds like  
10 another good topic for our last discussion here on  
11 strategies, trying to get some ideas on that.  
12 Yes, Eric.

13 MR. BORSTING: This is a question -- and  
14 commercial is not an area that I even know very  
15 much about, but you keep talking about these  
16 controllers or these items that aren't set  
17 properly. I don't see anybody from the  
18 manufacturers here on this specific widget, I'll  
19 call it, or system.

20 I'm just wondering, since a commercial  
21 building performs with or without it functioning  
22 properly. Maybe the owner doesn't know and he  
23 can't go back to the manufacturer and say "gee, I  
24 think I've got this program wrong" or "I don't  
25 think it's functioning properly."

1           Maybe the manufacturer isn't aware of  
2     the situation. Here's an opportunity to get them  
3     to a table and say "do you know?" Maybe they  
4     don't, maybe they do, but again maybe there's a  
5     way that they can help educate instead of a  
6     mandate or something. Maybe they aren't aware of  
7     it?

8           MR. CENICEROS: Okay. Any other  
9     comments on non-residential markets potential? In  
10    the back row, Pat?

11          MR. EILERT: This is a little more  
12    general maybe, but I'm thinking about kind of a  
13    regulatory approach going after existing  
14    buildings. I kind of understand, I believe, the  
15    standards approach to this, in the sense that I  
16    think that I understand the limit on how far you  
17    can take that would depend on kind of federal pre-  
18    emption more or less as a principle.

19          I have a lot less idea on where the  
20    limit is on building standards in terms of how far  
21    can you go with say, the definition of an  
22    alteration. Is there any kind of -- I've looked a  
23    little bit at the Warren-Alquist Act and I can't  
24    remember seeing that issue discussed very much.  
25    So do you have a sense, or can you give us a sense



1 of how far you can go with an alteration?

2 MR. CENICEROS: Elaine, or is Pat still  
3 here? Would you like to address that? Elaine  
4 works directly on the building standards.

5 MS. HEBERT: Elaine Hebert with the  
6 Energy Commission. I think it's spelled out to a  
7 pretty good degree in the standards. And we could  
8 look at that maybe later today or sometime to see  
9 if it answers your question. But we do pretty  
10 much spell out what's the definition of an  
11 alteration.

12 MR. EILERT: Well, let me give you two  
13 examples. Let's take the one that Lynn brought  
14 up. The idea that we might change the threshold  
15 from 50 percent of lighting fixtures down to 40 or  
16 30 or something like that. So the question is is  
17 that within the permit scope.

18 And then another one that I think is  
19 over the line might be let's say that we go out to  
20 some of these persistence studies that was brought  
21 up earlier on commissioning, for example, and we  
22 show that there is a lot of savings associated  
23 with retro commissioning, or maybe a CHEERS rating  
24 or something like that.

25 On a periodic basis could the Commission

1 say well, you've got to do this every few years  
2 within the current scope. I'm assuming that's  
3 over the line, and the other one is not. Those  
4 are the kinds of questions I'd like to have  
5 answered.

6 It looks like a lot of subtleties, just  
7 listening to John's thoughts here on the types of  
8 things you can do with code, but generally I'd  
9 like to have a better sense.

10 MS. HEBERT: I think there are some gray  
11 areas.

12 MR. CENICEROS: I'm sorry Bill  
13 Pennington couldn't be here today.

14 MR. MAHONE: Let me make a stab at it.  
15 I think, yes, Bill could answer it more directly.  
16 But this variation, a variation of this question  
17 has come up in regards to the proposals for the  
18 2005 standards to put in requirements for what you  
19 have to do when you replace windows in a house or  
20 what you have to do when you replace the air  
21 conditioning in the house.

22 The energy code people at the Commission  
23 appear to be taking the position that under the  
24 Warren-Alquist Act the Commission can regulate a  
25 lot more of the energy aspects of existing

1 buildings than they have. And they're beginning  
2 to propose to do that in the 2005 standards.

3 And as near as I can tell it's fairly  
4 open-ended about what authority the Warren-Alquist  
5 Act gives the Commission. The problem is that  
6 ACD, which governs the rest of the building codes,  
7 has this grandfather clause requirement in it that  
8 basically says you can't force somebody to upgrade  
9 an existing building, although there seem to be  
10 some exceptions to that.

11 You know, the city of Sacramento  
12 Building Department requires homeowners to put  
13 smoke detectors in all the bedrooms whenever they  
14 do an addition to their house. But there seems to  
15 be some regulatory interagency headbutting about  
16 this issue that hasn't been completely resolved.

17 Commissioner Pernell spoke to this issue  
18 a little bit this morning. The Commission is  
19 interpreting that the Warren-Alquist Act gives it  
20 a lot of latitude for regulating the energy  
21 aspects of the code.

22 MR. CENICEROS: Thanks, Doug. And it  
23 might help to explain that, in the course of the  
24 AB 549 study we're not going to worry too much  
25 initially about whether the existing authority is

1 clearly there to do certain strategies.

2 We're going to make that list of  
3 strategies that seem to make sense, and there  
4 seems to be a strong need for those things to be  
5 done.

6 And then look at all the agencies that  
7 have some kind of say in that kind of activity,  
8 and look at the lines of authority and see if  
9 those need to be clarified, and if additional  
10 authority needs to be provided through new  
11 legislation or other similar kinds of changes.

12 So we will be looking at those  
13 relationships between organizations like the CEC  
14 and HCD. John?

15 MR. HOGAN: John Hogan, city of Seattle.  
16 I would certainly second the approach you're  
17 proposing here, Bruce. Obviously you should  
18 figure out what the good mechanisms are. If the  
19 legislature has already directed you to bring a  
20 proposal back to them obviously that could include  
21 legislation to correct some authority problems if  
22 that's one of the things getting in the way.

23 In terms of regulatory approaches --  
24 I've been speaking about those because that's my  
25 experience and my background. I certainly

1 wouldn't suggest that people limit ideas to that.

2           To the extent that there's lots of great  
3 incentive programs makes my life a lot easier or  
4 the people that are building code officials.  
5 Because the projects will all come in and they'll  
6 be way beyond code, so that would be great.

7           But to respond to the question about if  
8 we're thinking big picture or outside the box what  
9 can you do, my department enforces all sorts of  
10 building regulations, and we have some that do  
11 have ongoing requirements.

12           So the fire department does annual  
13 checks about the fire and life safety system. Our  
14 boiler inspectors do annual checks of boiler  
15 systems for safety. Our elevator inspectors do  
16 annual checks of elevators. So there is some  
17 precedent, if you might want to consider that for  
18 things to be done after initial construction.

19           But I would also say those are the  
20 exceptions. But generally, the only thing that  
21 building departments get involved in is what's  
22 tied into the permit, it's not anything ongoing.

23           So if you're going to build a new  
24 building or make a substantial alteration we'll  
25 track it, we'll see what you install. We don't

1 necessarily see whether it all works, you know, we  
2 make sure it's installed correctly.

3           So there might be some potential to look  
4 beyond that, but it's rare cases where that's been  
5 done generally.

6           MR. CENICEROS: Okay, one more comment  
7 here, then we're going to move on to strategies.  
8 No?

9           Okay, we've kind of been transitioning  
10 from talking about specific opportunities to  
11 talking about how to take advantage of those  
12 opportunities, in other words strategies,  
13 mechanisms for achieving additional savings  
14 potential in existing buildings.

15           So before we move formally into that  
16 discussion I want to ask everybody, to check in  
17 with you, if you're ready for a little five minute  
18 break here before we continue? I see some heads  
19 nodding. Why don't we take a five minute break,  
20 we'll be back at 2:45 and we'll continue with that  
21 discussion.

22 (Off the record.)

23           MR. CENICEROS: Let's get started again,  
24 please. So we've talked so far about both  
25 residential and non-residential energy efficiency

1 proven opportunities, a little bit about  
2 characterization of those markets, and now we want  
3 to talk about some of the strategies that some of  
4 you are starting to talk about here.

5 In terms of how is it, what kinds of  
6 mechanisms will we be able to employ possibly to  
7 take advantage of the savings. We've heard a lot  
8 about controls issues, about complexity issues  
9 there.

10 We've had suggestions ranging from more  
11 regulation of specific areas, specific  
12 improvements that need to be done, versus  
13 voluntary approaches where we support the market  
14 out there for providing these services for the  
15 private market, and educate the public that these  
16 services are available.

17 So who would like to start off with some  
18 suggestions on specific strategies because we want  
19 to make sure that we include in our analysis here.  
20 Eric?

21 MR. BORSTING: I'll start. Eric  
22 Borsting. Just kind of a general question.  
23 Again, I think we need to look at who this impacts  
24 and who we should have at the table with us.

25 Real estate agents, BOMA is not here for

1 the commercial side, and they should be here. One  
2 of the things, if you start talking about  
3 enforcement of some code language, you're going to  
4 need the building officials, because it does  
5 impact them.

6           It impacts their workload, their  
7 business. And I know when it comes time to  
8 propose new code language they are not always the  
9 most receptive to it because it increases their  
10 work load. It kind of snowballs because their  
11 costs get passed on to the builder or whatever.

12           So I think it would be a huge benefit  
13 for this group to sit down and put together a list  
14 of all the people that really should be at the  
15 table each time. And I know you extended  
16 invitations, but not I think it's the twist your  
17 arm thing and say "you will be here because we  
18 need you," and figure out how to get those people  
19 here.

20           Otherwise we can sit around here and  
21 come up with all these great ideas, and it comes  
22 time to take it to the legislature or take it to  
23 some place, and now all of the sudden you've got  
24 these powerful groups saying we don't want it.

25           So we've spent a lot of time -- not



1     wasted it, because at some point it would be  
2     good -- but at that time you go God, we wasted all  
3     this time and these guys are fighting us. So I  
4     think it's kind of figure out who the enemy is,  
5     get them on our side working with you, at least  
6     hearing them, and maybe we can get it further on.

7                 So I think it's we need to make sure we  
8     have the right people here.

9                 MR. CENICEROS: Thank you, Eric.  
10     Comments and suggestions about strategies we can  
11     employ?

12                MR. RIEDEL: I have a comment. This is  
13     Randel Riedel, Energy Commission. In my  
14     discussion with a lot of contractors who are on  
15     the ground trying to do a lot of this work that  
16     deals with a number of areas -- and I'm going to  
17     focus on the residential right now -- one thing  
18     that I'm hearing back pretty consistently is this  
19     concern in regards to the establishment of  
20     incentives.

21                And I wanted to just toss that out and  
22     maybe hear from people who are practitioners or  
23     who have been involved in incentive-based  
24     approaches before, and see if -- either validate  
25     or not -- some of this information that I've heard

1 concerning the use of incentives.

2 Let me give you an example. I know of  
3 one point in time there was an incentive program  
4 of some \$75 or something of that general value for  
5 doing duct sealing.

6 And a number of the contractors that  
7 I've spoken with have said "you know, whenever you  
8 set up an incentive like that you drive the market  
9 down to that low price, and what happens is that  
10 the people who end up doing that work, instead of  
11 it really costing \$150 to \$200 to do that work  
12 they're basically doing it for \$75 and maybe  
13 you're not getting the true type of performance or  
14 quality that you're wanting in the marketplace."

15 So my question both is to people who  
16 have managed those types of incentive programs.  
17 How is it that you can help to retain the  
18 incentive as an incentive by still allowing the  
19 true cost of the work to be handled by the  
20 contractor, to be gained by the contractor?

21 Was that clear? In other words, if  
22 it's actually costing the contractor \$150 or \$200  
23 to do the work, how does he compete in the  
24 marketplace with people who are driving it down to  
25 its lowest price? So if somebody first could help

1 me with that from the contractor's perspective, I  
2 would appreciate it.

3 MR. DAY: Randel, I might be able to  
4 give some assistance there. Michael Day with  
5 Rockwood Consulting. At the time -- I was the  
6 head of special projects for Beutler Heating and  
7 Air when the SB 5X money came out.

8 We structured a, SMUD came to us and  
9 asked for assistance in structuring a program  
10 that, although this was on the new construction  
11 side, would incentivise and help builders to go  
12 from 10 SEER to 14 SEER.

13 The 10 SEER was typically what was done  
14 for Title 24 compliance and on base housing.  
15 That's pretty much, that was the baseline. There  
16 were, it was available to go upgrade on that, but  
17 not too many people were taking the upgrade option  
18 although it was being advertised fairly well by  
19 Beutler.

20 What ended up happening was that SMUD  
21 and Beutler got together and said okay, if we're  
22 looking at the increase in the cost of the  
23 equipment -- and there were a few other things  
24 that went in, such as it needed a larger pad, it  
25 had to get through a slightly larger gate, it

1 needed a different style technician because of  
2 some things that were associated with it.

3 But if you put in this 14 SEER equipment  
4 what was the marginal difference between what was  
5 going in originally and what was going to be put  
6 in. And I think that for something around \$3  
7 million it ended up that -- and I'm just going off  
8 the top of my head here -- about 5,000 units were  
9 converted from an average 10 SEER to an average of  
10 about 13, 13 and a half.

11 And the reason it didn't all go up to 14  
12 is that, at the five ton, the equation that was  
13 worked out for increase in SEER per ton didn't  
14 work out to where it was incentivised.

15 But I think that the critical part there  
16 was that, in this case the utility, said that it  
17 made more sense to pay for peak demand being taken  
18 off by sending that money to the contractor to pay  
19 for the marginal difference -- not for the entire  
20 piece of equipment, but for the marginal  
21 difference between the base unit that was being  
22 put in and the best unit that they could get at a  
23 reasonable price. And there was some real  
24 diminishing returns after that.

25 And that project went extremely well.

1 In 30 days we were able to switch something like  
2 50 projects. Now there were some long days there,  
3 but it was literally -- the next evaporator coil  
4 that went out after that project had been done --  
5 boom, the next one that went out to that job site  
6 was set up for the new program and the next  
7 condensing unit that went out there.

8 And it took effect very quickly, and it  
9 resulted in a pretty significant market  
10 transformation. Again, the secret was that it was  
11 the marginal difference between what was already  
12 being done and what would be going to put in. And  
13 it was in the utility's interest.

14 MR. CENICEROS: Yes, Doug?

15 MR. BEAMAN: Douglas Beaman. Randel, I  
16 really wonder about the accuracy of the data you  
17 got from contractors. The description that you  
18 gave sounded an awful lot like the RCP Program,  
19 where contractors got a fee for doing duct testing  
20 and then there was an additional small fee for  
21 sealing the ducts.

22 And I certainly don't have all the  
23 utility data on all that, but my understanding is  
24 that it was very successful. And I don't think  
25 contractors were constrained by the price of the

1 incentive. Maybe they were for the price of the  
2 duct testing.

3 And so if they did the testing as part  
4 of a regular service call, that incentive that was  
5 provided probably just covered the cost of that.  
6 And if they could show they had significant leaks  
7 in the ducts they would then sell that service to  
8 the homeowner if they chose to and if the  
9 homeowner decided to do it.

10 But they were changing market rate for  
11 that duct sealing. So I think that complaints or  
12 concerns that that was driving the price down --  
13 I'm not sure that was a very valid situation.

14 MR. RIEDEL: The intent of why I'm  
15 bringing this up is to be a little bit of a  
16 devil's advocate in some ways.

17 I'm just wanting to hear -- I'm wanting  
18 to get a feel from those who are n the field  
19 competing with others in regards to the actual  
20 cost that may be associated with doing an activity  
21 and funds that are put up to assist people to move  
22 in that direction, and only from the perspective  
23 of -- ultimately, I think incentives do have a  
24 real valid and good function and place to operate,  
25 but I'm just trying to look at them in perspective

1 to how and where we might go in regards to some of  
2 our suggestions of getting products or services  
3 into the marketplace.

4 MR. BEAMAN: Douglas Beaman again. And  
5 this is just my own personal opinion on this, is  
6 that I do a lot of classes with HVAC contractors  
7 every year. And they never understand that an  
8 incentive is just carefully designed to give them  
9 enough of a boost to do something, to go from a 12  
10 to a 14 SEER or whatever.

11 And the most common comment that I hear  
12 is "well, that incentive isn't enough for us to  
13 make money on." And that is true. And what they  
14 look for -- and not understanding the intention of  
15 the incentive. The only possible solution to that  
16 is just more education with the contractors and  
17 that.

18 But they're looking -- and I was looking  
19 to see if John Proctor was here, because I hear  
20 contractor's say "well, the check me program  
21 doesn't give me enough money if I'm only doing a  
22 couple of them. I have to do it all day long to  
23 make money on it."

24 And I kind of scratch my head with the  
25 economic reasoning like that. But they do look for

1 "this incentive should make me money." And I  
2 don't think the incentives will ever do that.

3 MR. CENICEROS: Bob and then Eric?

4 MR. KNIGHT: It's Bob Knight from BKI.

5 You know, I think we ought to be thinking about  
6 incentives in a little bit broader definition.

7 Essentially it's the state or some authority  
8 putting out money, actual cash, to make something  
9 happen.

10 And it's too easy for us to jump to the  
11 conclusion that what we're talking about is just  
12 money that goes primarily to the consumer to  
13 induce the consumer to behave in some certain way.

14 My experience with contractors, and  
15 particularly in our home performance program, is  
16 that the kind of incentive that is most needed to  
17 produce real innovation and change in this  
18 particular field is training for the contractors.  
19 And that is just as much of an incentive as giving  
20 money to somebody.

21 What we find again and again is that the  
22 biggest stumbling block to offering really  
23 sophisticated energy efficiency services and  
24 residential retrofit market is that the  
25 contractors don't know how to do it. And they



1 don't even know that they don't know how to do it.

2           They think they're competent. And yet,  
3 there is so much that they mostly need to learn.  
4 And providing that kind of support to the  
5 contracting community as a service for less than  
6 cost to the contractor, I think, would promote  
7 more change than any other single thing that we  
8 can do.

9           Moreover, what you're doing is creating  
10 a resource that has persistence. The contractor  
11 gets trained, he stays trained. You give money to  
12 homeowners they do what you want, but when the  
13 program stops, as it always does, then suddenly  
14 the contractors who have been depending on that  
15 program are left high and dry, they don't have  
16 anything to offer to their customers any more as  
17 an inducement to join up.

18           And most market transformation programs,  
19 not even market transformation, but most incentive  
20 programs ultimately fail because they have a  
21 finite life and not enough thought and strategy  
22 has gone into making a transition away from the  
23 incentive based approach to something that can  
24 stand on its own.

25           So I'm in favor of thinking of

1 incentives as an investment in a resource that is  
2 going to last, namely the contractor community  
3 that brings so many benefits back to the state and  
4 to the public, not just the energy efficiency, but  
5 job creation, the economic benefits, health and  
6 safety benefits, and all types of things that  
7 otherwise the society is losing.

8 MR. CENICEROS: Eric?

9 MR. BORSTING: Eric Borsting. I think  
10 you've hit it perfectly there. One of the  
11 problems is the level of skilled labor in the  
12 marketplace today. And incentives by utilities  
13 are to try and get people to do it right the first  
14 time and do it the way they should be doing it all  
15 along.

16 I mean, 20 percent duct leakage plus is  
17 not acceptable. I mean, come on. So now we've,  
18 the incentive is there to go to six, eight, ten,  
19 whatever the number is. And you have the  
20 contractor saying "man, this isn't what I've been  
21 doing. It's going to cost me more money."

22 It shouldn't cost any more money. It  
23 takes a little more time, it reduces callbacks,  
24 you get a better job, better reputation in the  
25 industry. So they're kind of crying because they

1 haven't had to do it before, and they really  
2 should be.

3 MR. CENICEROS: I think I saw you next,  
4 Dave, then Doug.

5 MR. ROBINSON: Okay. Dave Robinson,  
6 Renaissance. I'm a contractor, and was involved  
7 in the program that was mentioned, the RCP  
8 Program. I think there was about \$70 for a test,  
9 and may another \$100, \$120 for actually sealing  
10 the ducts, and it was tied with a higher  
11 efficiency unit.

12 We did several hundred, and it was good  
13 to open the door to customers. Customers opened  
14 the door to us because the utility was backing the  
15 rebate.

16 So then it went away after a couple of  
17 years, and from what I understand it didn't go  
18 away because it didn't work or because it wasn't  
19 efficient or anything, but the bureaucracy and the  
20 paperwork that was involved with that voucher --  
21 it was just really convoluted and difficult to  
22 administrate.

23 But what happened was that my sales  
24 force, through getting some help to sell a few  
25 hundred jobs, then became trained to sell duct

1 sealing. And now, without an incentive, they are  
2 continuing to sell duct sealing, albeit not quite  
3 at the same rate, but they're still selling it.

4 And Randel, you mentioned that you felt  
5 like the numbers were causing the price to go  
6 down. The typical duct seal job was sold for  
7 \$875. So, you know, the 70 or 120 or whatever was  
8 at most like about 20 percent.

9 The values of incentives are two-fold.  
10 Number one, a few dollars to incentivise the  
11 customer to go ahead and do something that they  
12 wouldn't have done. But to me that's the smaller  
13 benefit.

14 Number two benefit is for them to open  
15 the door to me to come and talk to them about it.  
16 And so it doesn't even really have to do with  
17 money, it has to do with the utility company logo  
18 and the utility company flag that I come flying  
19 the incentive under.

20 And so I really don't like incentives,  
21 long-term incentive dependent business. I've had  
22 one of those. I've been involved in energy for an  
23 awfully long time. We had the zip program from  
24 '80 to '86 -- you guys remember that?

25 Well, in '86 everything ended for a

1 whole bunch of contractors that kind of got  
2 dependent on that. We really don't want that.

3 But especially when we're doing market  
4 transformation, and we're needing to have the  
5 public start to think differently, one of the best  
6 things that we can do is incentives, rebates, or  
7 full-blown building performance.

8 It hasn't been tried yet. The closest  
9 thing would have been that RCP duct seal program,  
10 where you had to test in, do the work, test out,  
11 turn in the numbers, warrant that a certain amount  
12 of performance is happening.

13 Now, we could do this with the whole  
14 house. And if we could get a rebate for a small  
15 amount of money, the service to do, you know, an  
16 analysis to gather all the data, is worth probably  
17 \$300.

18 But if we could get \$100 to go do the  
19 service that's going to take six or eight hours of  
20 work to gather all the data, compute all the  
21 reports, present it back to the customer, if we  
22 could get an incentive of maybe \$100 the reports  
23 that we are going to give them back are so  
24 compelling that we're going to sell at least 50  
25 percent of them, and that's going to be a 7 to 10

1 to 15 thousand dollar sale, depending on what they  
2 want to do.

3 As you can see, the incentive of \$100 on  
4 \$10,000 is not much. But right now nobody wants  
5 me to come to their kitchen table to tell them the  
6 story, and if I could get that small amount of  
7 help, through the utility rebate, to get to the  
8 kitchen table, do all my testing and then come  
9 back, we can take it from there. Thanks.

10 MR. CENICEROS: Thanks. Doug's next,  
11 and then Bob.

12 MR. MAHONE: I wanted to throw in a  
13 couple of cautionary tales about incentives gone  
14 bad. Basically, what you're trying to do with  
15 incentives is persuade the market to change.  
16 well, the market is this free market mishmash of  
17 all kinds of actors, all trying to make a buck.

18 The first and biggest example, which  
19 most of you or many of you may remember, was in  
20 the 70's when there was a big federal tax credit  
21 for solar water heaters. Well, the tax credit  
22 ended and the solar water heater industry died. I  
23 mean, those guys all just folded up their tents  
24 and went on to doing other things.

25 So it did create a market, but it didn't

1 create a sustainable market. Another example,  
2 Hawaiian Electric, back around 1990, wanted to  
3 encourage compact fluorescent. They figured we  
4 can give our customers a great big coupon and all  
5 our customers will run out and buy compact  
6 fluorescent that'll bring the market into place  
7 and we can walk away.

8 So they got all the retailers alerted  
9 that there was going to be these two \$5 coupons  
10 that were going to land in the ratepayers  
11 mailboxes and they were going to be walking down  
12 to the stores that weekend to buy compact  
13 fluorescent, be sure and stock up. Retailers said  
14 thank you very much.

15 The day before the coupon arrived in  
16 everybody's mailbox at \$5 a coupon they raised the  
17 cost of a compact fluorescent lamp by \$5. And  
18 sure enough people went out and bought a lot of  
19 compact fluorescent that weekend and they made a  
20 lot of money but they didn't jumpstart the market  
21 like they thought they would.

22 So you've got to be almost as smart as  
23 the market if you're going to be doing these  
24 financial incentives and you've got to be in it  
25 for the long run the way most of the other market

1 players are or things can go very seriously array.

2 MR. CENICEROS: Thanks, Doug. Bob?

3 MR. KNIGHT: Bob Knight from BKI. I  
4 just want to pick up from what Dave was just  
5 saying. You know, it seems to me there's a  
6 wonderful opportunity for synergy here between the  
7 incentives programs of the CPUC and the regulatory  
8 functions of the CEC.

9 Dave was speaking as a trained  
10 contractor, he's living proof of the value of  
11 training, because he's here, he's speaking on  
12 behalf of a more enlightened point of view than  
13 what most contractors have. He got that through  
14 training, and somebody's got to provide that  
15 training, and that could come from the CPUC  
16 programs, through the utilities or whoever.

17 And at the same time, if you can marry  
18 that with performance standards on the other side,  
19 so that you actually get some proof and a measure  
20 of performance in the finished job, then you would  
21 have both sides of the equation working very  
22 nicely together.

23 And then if you added a third leg to  
24 that stool in the form of the small incentives  
25 that Dave was speaking on behalf of. I'm not in



1 favor of incentives particularly, but I see Dave's  
2 point and I can see as a door opener -- not just a  
3 door opener because of the \$100 -- but because it  
4 says "PG&E" or it says "state of California" or  
5 whatever behind it.

6 I mean, Dave could accomplish the same  
7 thing by saying "I'm going to give you \$100 off."  
8 He could do it himself, but it wouldn't have the  
9 same weight as it would if you're in essence  
10 getting subsidized by the state.

11 But I think those kinds of incentives  
12 ought to sunset, and they ought to fade away in  
13 some smooth way, rather than saying we're going to  
14 carry it and act like you're carrying it forever  
15 and after two years you cut it off without much  
16 notice to the contractor's involved.

17 It would be an awful lot better if  
18 incentives were used more strategically, so that  
19 everybody knows that in three years the \$200  
20 incentive that you started with is gradually going  
21 to reduce to zero.

22 And so contractors better take advantage  
23 of it, better build their contract base, and as  
24 Dave was illustrating, if a contractor really sees  
25 it that way he can make the benefits of that

1 program last, because he learns how to market it,  
2 he learns how to sell it without the incentive.

3 But, you know, the main point I'm trying  
4 to make here is that there are all these elements  
5 that really need to work together that really  
6 aren't working together very well today, and it  
7 would be nice if your report could reflect the  
8 importance and the value of that kind of synergy  
9 among different measures, different kinds of  
10 incentives and training and support that could be  
11 given by the different agencies that are involved.

12 MR. ROBINSON: Isn't it true that we  
13 talk about the house as a system. I think it's  
14 really a good parallel to look at the market as a  
15 system. And all of these parts that you're  
16 talking about need to work together, just like all  
17 the parts that go into building performance.

18 MR. CENICEROS: Thank you. Michael?

19 MR. DAY: Michael Day, Rockwood  
20 Consulting. I just wanted to say one slightly  
21 cautionary tale around this. There's been a lot  
22 of talk about something that can be a pretty  
23 serious problem in terms of duct leakage in a lot  
24 of different parts of the state, but I think that  
25 it would ill-serve the purposes of this group to

1     assume that it's all that way.

2             I think that one of the major  
3     distinguishing factors is between site-built duct  
4     systems and those that are factory-built duct  
5     systems.

6             When the factory-built duct systems --  
7     where the connections are being made under  
8     controlled conditions -- are brought out to the  
9     field, connected and tested, they typically have  
10    significantly lower leakage rates than the ones  
11    that are being built by guys that are dragging,  
12    you know, flex duct through the attic and trying  
13    to stitch it together when it's 140 degrees up  
14    there.

15            I know that a lot of the people that  
16    have been here have seen the systems built by  
17    Calflex, or my former employer, Beutler. Beutler  
18    ran a program with PG&E for a number of years that  
19    was not a CHEERS-certified type duct, but I think  
20    it was something about 90 percent of theirs ran  
21    within a percent of six and a half percent, they  
22    were right about there.

23            So I think that while in some cases and  
24    some segments of the HVAC market there can be a  
25    lot of problems with duct leakage -- I think the

1 investigations of Dr. Proctor can definitely bear  
2 that out.

3 But I also think that it should take  
4 into account that that's certainly not all, and  
5 that there are some substantial transformations  
6 going on. And that whatever's done there should  
7 be paid attention to, the quantum differences  
8 between site-built and factory-built duct systems.

9 MR. CENICEROS: Eric, you have a  
10 comment?

11 MR. BORSTING: Yes, Eric Borsting. I  
12 think the utility programs, the energy star  
13 programs that are out there now by the utilities,  
14 show how it should be run. Basically, you sign up  
15 a subdivision, you have -- I think there's two  
16 years, Tony, is that what it is? -- but what  
17 happens is they don't cut off at a certain point.

18 When you sign a subdivision up, as long  
19 as you build it at a fairly decent rate that whole  
20 subdivision will be under their program and they  
21 get their rebates. And I think that's one of the  
22 best ways to run it.

23 I remember chairing the codes committee  
24 for CBIA and having one of the utilities a week  
25 before stop a program -- and i won't say who it

1 was -- midstream. And we had to call a timeout,  
2 because the utility was there, the builders were  
3 there, and we almost got into a fistfight.

4 Because they stopped it midstream and  
5 here was a builder selling a product that he was  
6 giving an incentive to, it wasn't the full thing,  
7 and now it's all his. So the utilities have come  
8 around, they've got a better system and it's  
9 working very well.

10 To the comment about all systems not  
11 being equal. Some HVAC contractors do it better  
12 than others -- and you do have to look at it  
13 territorial, but you do have to look at it -- and  
14 even the good ones sometimes fall down.

15 MR. CENICEROS: Eric, regarding your  
16 energy star homes model, do you have a suggestion  
17 on how that model could be adapted to retrofitting  
18 existing buildings?

19 MR. BORSTING: That's something that I  
20 think the utilities would have a better handle on  
21 within their market. I think there are some areas  
22 -- setback thermostats -- I mean there's some  
23 things that could be done to help contribute.

24 MR. PIERCE: Tony Pierce with Edison. I  
25 think the point Eric was making that was really

1 good with respect to the energy star homes is that  
2 it's multi-year now, and we're filing to the  
3 Public Utilities Commission to administer our  
4 programs for multiple years.

5 So potentially even extending that  
6 program further still recognizing that production  
7 builders have developments that are built out over  
8 three or four years. And we will have the same  
9 program in place over the life of that project.

10 So that whatever we did in the existing  
11 buildings segment we would want to do in a similar  
12 vein I think is your point. Have it available  
13 over multiple years, recognizing that contractors  
14 have to invest in training, in whatever tools are  
15 necessary to get ready, and market to that  
16 segment, and then offer it for some period of  
17 time.

18 MR. RIEDEL: And it's also my  
19 understanding that the CPUC is moving more in the  
20 direction of a three to five year term for  
21 programs also, at least there is a proposal on the  
22 books to try and do that.

23 MR. PIERCE: I've hear rumors.

24 MR. RIEDEL: You've heard rumors, fine.

25 MR. BORSTING: The housing industry

1 would applaud that, that would be great.

2 MR. RIEDEL: Well, this is also for  
3 existing and for the public goods price program.

4 MR. KNIGHT: It's Bob Knight again with  
5 BKI. I just wanted to give a point of  
6 information. Energy star does have a program for  
7 existing homes. It's called home performance with  
8 energy star. And it's specifically for retrofits.

9 It's a fairly new program. The first  
10 user of it was Na-Certa, which still has by far  
11 the biggest program. And we're one of the first  
12 authorized programs, in fact the only one in the  
13 west. That means that our contractors can use the  
14 energy star logo. We can use the energy star logo  
15 in our marketing.

16 And what it requires is one of two --  
17 it's actually rather simple -- it requires a full-  
18 scale home performance approach, which is rather  
19 loosely defined. But it requires a full range of  
20 testing of the envelope and the equipment,  
21 diagnosis, solution, complete solution.

22 And the solution has to be verified  
23 either by a test-out of ten percent of the  
24 installations or by the use of formally certified  
25 technicians and contractors to do the work.

1           In our case we've chosen to do the ten  
2   percent test-out because the certification process  
3   is too onerous at the moment, and the only really  
4   viable certification organization is based in New  
5   York, and is pretty much overwhelmed with other  
6   responsibilities, although we're working with  
7   them.

8           But anyway, I just wanted to make sure  
9   that everybody knows that there is a home  
10  performance, I mean an energy star program for  
11  existing homes. It does not seek to apply the  
12  same numeric standards as the energy star program  
13  for new homes, you just can't do that.

14          But it is a very good program. It's now  
15  been adopted by several utilities in the northeast  
16  to do on a service territory basis. Several  
17  cities, such as Kansas City and Austin, have  
18  undertaken municipal level programs. Our program,  
19  plus Na-Certa's \$10 million statewide program are  
20  the main ones.

21          New Hampshire is getting into it,  
22  Massachusetts. A couple of utilities that involve  
23  both Massachusetts and Long Island. So it's  
24  starting to move. But it's something you should  
25  be aware of.



1 MR. RIEDEL: Thanks, Bob.

2 MR. CENICEROS: Okay, Dale and then  
3 Lynn.

4 MR. GUSTAVSON: Dale Gustavson, ACCA. A  
5 quick question for Dave. Maybe two quick  
6 questions and a comment. How is it that you are  
7 now opening the door on duct ceiling without the  
8 incentive? Is it a matter of consciousness among  
9 the salespeople? What is it you're saying or  
10 mailing with your customers to get the door open  
11 now?

12 MR. ROBINSON: You know, I think it's  
13 just a matter of competence, that after selling  
14 about 200 jobs they just got it. And as you can  
15 see, the amount of incentive compared to what the  
16 sales price was was not that great anyway, but we  
17 built the belief inside of the salesperson's head.  
18 And that was one of the biggest things.

19 MR. GUSTAVSON: And then the followup  
20 question is, in your marketplace, which is the  
21 Central Valley, would most of the contractors who  
22 were participating in that program, would they be  
23 in the same place you are or would they be the  
24 rare exception?

25 MR. ROBINSON: Gosh, I couldn't speak to

1     that very much. I would say that not very many  
2     people do duct ceiling. Most contractors still  
3     don't see the benefit of it. And so we're still  
4     having to sell it. Nobody knocks on our door.  
5     Nobody calls us up and says "hey, come and seal my  
6     ducts, I just really think they're leaky."

7             Like I said before, the incentive was  
8     enough to just jumpstart the engine a little bit  
9     at my company and some others, maybe you could say  
10    prime the pump. And that's what I think  
11    incentives should do, is prime the pump, get it  
12    going, and let it go toward free market. And  
13    that's what it did in our company.

14            MR. GUSTAVSON: Just a couple of  
15    cautions. I would, I've known Dave for a couple  
16    of years, and the word cautions is on incentives.  
17    That they can add credibility when none is  
18    deserved.

19            And they can make sales instead of  
20    encouraging -- and we're talking about contractors  
21    here -- contractors to learn how to sell. So they  
22    actually reduce the barriers, or the need to learn  
23    how to sell.

24            And if Dave offering \$100 off wouldn't  
25    have the same impact as a utility rebate, then we

1 haven't succeeded either, because Dave needs to be  
2 so credible that when his people call on the  
3 customer the customer will respond.

4 There's caution and lessons there. I  
5 almost have to take off my ACCA hat to make some  
6 of these comments. I think that incentives can  
7 actually do more harm than good depending on who's  
8 inspecting the program.

9 MR. CENICEROS: Okay. Let's get a  
10 response there, and then I think you have a  
11 question, Lynn, and we'll get to Devra afterwards.

12 MR. PIERCE: What I heard Dave say, and  
13 I agree with, I've heard it from a lot of  
14 customers, is that his \$100 isn't the same as the  
15 utilities \$100. Because when you bring the  
16 utilities' \$100 check in it's far more than just  
17 \$100.

18 It's the logo, the brand, the equity  
19 that we build with our customer, we're saying this  
20 is a good product or a good system and you ought  
21 to be doing this.

22 MR. GUSTAVSON: Right. Dale Gustavson,  
23 ACCA again. Unless you have an exceptional  
24 company that moves from using that credibility to  
25 establishing their own then it doesn't have the

1 intended effect.

2 In fact, credibility resides with the  
3 logo and not with the contractor. It's the  
4 exceptional contractor that does what Dave's  
5 company has done. What more do is rely on the  
6 credibility of the utility to get in, and there's  
7 no test of whether their work is done correctly.

8 And they are led to believe -- the  
9 people that Randel is talking about in the  
10 marketplace -- that drive the prices down and  
11 drive the quality down. I know that Dave used it  
12 properly, though I don't think that's what happens  
13 most of the time. And that's why we're still  
14 working on this 25 years later.

15 MR. ROBINSON: Well, Dale, maybe if I  
16 could respond quickly to that. I agree with a  
17 very small incentive. And that will keep the  
18 people that are charlatans and the people that  
19 would just build a business just based on the  
20 incentive, they wouldn't be able to do that when  
21 the incentive was \$100 on a \$10,000 purchase.

22 I mean, that's not enough for a free  
23 ride. But you do come in with the credibility of  
24 the utility company logo which causes people to  
25 open their door and say "come on in, Mr.

1 Contractor, tell me about it."

2 And that's the help that I would like to  
3 see happen toward market transformation. The  
4 other thing that would help keep charlatans out is  
5 the test-out procedure, and we're back to that  
6 word performance.

7 You can't get what we're talking about  
8 by just making a recipe cookbook list of things to  
9 be done. You actually have to hook up a blower  
10 door, hook up duct blaster, and prove that you've  
11 delivered performance. And that can and should be  
12 done. Anything that we develop should have that  
13 attached to it.

14 MR. CENICEROS: Okay. Devra's been  
15 waiting very patiently. Lynn, you had a question  
16 first?

17 MS. BENNINGFIELD: I had just a quick  
18 comment about energy star bringing in to existing  
19 homes. I just wanted to mention that the non-res  
20 counterpart, a similar program, is being developed  
21 by LEED for existing commercial buildings. So  
22 we'll be looking at the aspects of that also and  
23 how they apply here.

24 MR. CENICEROS: Devra, thanks for your  
25 patience.

1           MS. BACHRACH: Thank you. Devra  
2   Bachrach on behalf of the Natural Resources  
3   Defense Council, or NRDC. And NRDC strongly  
4   supports efforts to increase the energy efficiency  
5   of California's system.

6           And first I just want to say it's great  
7   to see all the utilities working together on this,  
8   and I'd like to commend the Energy Commission,  
9   utilities and HMG for getting this process going  
10   with a clear framework for all of us to work from.

11           I think it's a good framework, throwing  
12   the net wide at first to get all the ideas. It's  
13   great to see so many people here today. And then  
14   narrowing them down to our top priorities to  
15   develop the action plan to move forward.

16           And I just wanted to mention that one of  
17   the key areas to look at as you're thinking about  
18   different measures and strategies is, as some have  
19   mentioned, the ability to enforce standards. If  
20   that's the strategy that you're looking at, and to  
21   measure the savings.

22           One of the new things that we're all  
23   thinking about these days is that the utilities  
24   are back in the business of assembling a portfolio  
25   of resources on behalf of their customers, and

1 they need to be able to rely on the energy savings  
2 to meet their customer's needs.

3 So just to keep that aspect of it in  
4 mind as we move forward so that these can be  
5 brought into the utility's portfolios as they're  
6 doing their resource planning going forward. And  
7 again, I think it's great that the goal of this  
8 process is to create a natural action plan to  
9 implement whatever recommendations come out of the  
10 process. So, thank you.

11 MR. CENICEROS: Thank you, Devra.

12 MR. RIEDEL: In regards to strategies.  
13 Vince, there's another strategy in regards to the  
14 support for contractors and through what happens  
15 on the distributor level is another aspect of  
16 this.

17 I know, through previous conversations  
18 with you, that's one of the tasks that you do  
19 through the distributor that you work for. Could  
20 you just give us some brief comments in regards to  
21 what you do in regards to supporting the  
22 contractor, and if you think that would be an  
23 interesting strategy that we should also take a  
24 look at?

25 MR. SEHWEDE: Absolutely. Again, my

1 name is Vince and I'm with CFM Equipment  
2 Distributors. And I thought I was going to get  
3 away today without talking, but again, I serve in  
4 the capacity of technical service and trainer for  
5 a leading distributor here in northern California.  
6 Our border reaches from Bakersfield to the Oregon  
7 border -- I should say our territory.

8 And we're quite proactive in training  
9 and support. And I see, along with the contractor  
10 -- I really enjoyed Dave's comments today, because  
11 we do see the grass roots of our industry, what  
12 actually is going on out there.

13 And number one, I think I would agree  
14 with Mr. Proctor earlier today regarding the  
15 charging of that inadequate air flow as the number  
16 one.

17 But also -- and I know it's mentioned  
18 today -- but thinking out of, you know, most of  
19 the contractors, as soon as that air enters into  
20 the return air room and leaves the register  
21 they're only concerned with the efficiency of the  
22 unit, whether they're doing it properly or not.

23 And again, we can't stress enough that  
24 entire envelope -- I know I'm probably preaching  
25 to the choir -- you know, you think about it, but



1 the homeowner is actually existing in the planet,  
2 and that's part of the air system that goes  
3 unattended quite often.

4           And just in general, for example, just  
5 something as simple as return airs in the  
6 bedrooms. For years we've done that, one central  
7 return. And as you gentlemen doing analysis have  
8 probably realized, once we block that flow of air  
9 we actually positively pressurize the bedrooms, we  
10 create a negative situation in the balance of the  
11 home.

12           And so this is where our contractors are  
13 completely oblivious and we're becoming more and  
14 more educated with awareness of indoor air  
15 quality, that's the buzz word today.

16           And number one, negative pressurized  
17 homes. Pesticides are sprayed on the bottom plate  
18 of a home. The garage is some of the most  
19 contaminated air. And when our house goes  
20 negative we get air from where we don't want, let  
21 alone infiltration adding to the load.

22           So, and carbon monoxide, that's probably  
23 been the biggest buzz. That's probably one of my  
24 biggest chores, when I deal with the homeowners  
25 and the calls that come in.

1           And depressurization of houses regarding  
2   to ventilation of fuel-burning appliances is a big  
3   issue. Not only does it reduce the life of the  
4   appliance, but it's a safety issue.

5           We are working with the National Comfort  
6   Institute, and we have them out regularly on  
7   training and updating our dealers, our  
8   contractors, in becoming more aware. Not just in  
9   putting --- believe me, the ducts in the ceiling  
10   that should be just mandatory -- and I know for  
11   our customers they're becoming slowly up to speed.

12          I feel very responsible as far as I have  
13   constant charging classes. As we know, improperly  
14   charged fixed meter devices is huge in energy  
15   loss. TXP's are improving that, and I work with  
16   Tony Pierce here as far as the rebate program, and  
17   one aspect of the higher equipment, it's kind of a  
18   byproduct, is we have increased the accuracy, I  
19   believe, with charging, because it is easier and  
20   we can get closer with TXP.

21          So those things are positive. Other  
22   than that, in the light commercial I should have  
23   spoke up there also. Actually, my forte in a  
24   former life was building controls, and i must say  
25   I actually come from the pneumatic end, where we

1 used to constantly gibble and fiddle with receiver  
2 controllers in order to get them to operate  
3 properly.

4           And we've gone light years as far as the  
5 digital systems and the reliability. How else  
6 could we configure a control logic as demand  
7 limiting, and I believe the subject today, one of  
8 the primary purposes, was demand, peak demand.  
9 How else can you monitor without kilowatt  
10 transducers that are very accurate and very  
11 reliable?

12           Digital processors, look how reliable  
13 computers have gotten to be. And I know things  
14 have become more technical, and yet within that  
15 aspect, the more technical it gets the more user-  
16 friendly it gets. Example, DOS to Windows.

17           So there's the building automated  
18 system, I think there's huge improvement there  
19 from what I've seen. Again, we can demand limit  
20 as we reach those peak loads we can shed unwanted  
21 and unnecessary loads. It's huge.

22           Again, in the commercial realm, one more  
23 thing I'll say before I go is fresh air in  
24 economizers, that subject was picked up today.  
25 The minimum requirement for ventilation for

1 commercial is, I believe, ten percent.

2           It's just general, every commercial job  
3 just about I've ever been on there's this  
4 misconception that just because the fresh air  
5 damper is set for ten percent open that it's only  
6 going to be ten percent fresh air allowed, and  
7 that's just totally untrue.

8           I was on a job last week, and that  
9 situation, that led to a peak demand problem, but  
10 I believe understanding and again, training our  
11 customers as far as on a distributor level to  
12 improve and these rentals will greatly increase.

13           Economizers, I have to agree, 90 percent  
14 of them are disconnected. Why? It's because they  
15 don't understand them. And that's the bottom  
16 line, education. So with that --.

17           MR. RIEDEL: I have a followup question  
18 for you, Vince. How many other distributors are  
19 you aware of in California that take this type of  
20 proactive approach in regards to training and  
21 supporting and providing technical assistance for  
22 their infrastructure?

23           MR. SEHWED: This is sure a good plug  
24 for us. There isn't, unfortunately. Again, we're  
25 quite proactive, and it gets down to marketing,

1     this is just good marketing.  And I believe the  
2     contractors want to know, they want to do better,  
3     our people do.

4             And they're more than willing, I never  
5     have a problem filling a class, because it is  
6     there.  And we do have a shortage of technicians.  
7     I'm sure Dave has found that he, finding a  
8     qualified technician, they're a premium today.

9             So it's just a real problem.  So  
10    training on our part is very important.  But I'm  
11    afraid to say that there's quite a lack on the  
12    distributor level.  We need to get together and  
13    get our act together.  And again we're doing it  
14    because it's just good, sound marketing.

15            Another issue is load calculations.  We  
16    know that big is not better.  There's huge loss of  
17    energy because we're oversizing equipment.  We've  
18    been networking, I've been working with the people  
19    at WriteSoft, they come out and do a regular class  
20    teaching basic computer skills for contractors and  
21    using their software to do a load calculation.

22            It's essential to do a load calculation.  
23    I'm sure Dave does.  How many contractors are out  
24    there doing load calculation?  It's pretty sad.

25            MR. RIEDEL:  Thanks, Vince, appreciate

1 your input.

2 MR. ROBINSON: If I could just tag a  
3 little bit about what Vince said about getting  
4 good technicians. Really, the building  
5 performance trade, it's not air conditioning, it's  
6 not windows, it's not insulation, it's really all  
7 of the above and plus the big overarching  
8 umbrella, understanding all of those.

9 And so what we're finding is we need to  
10 build them up from inside, train 'em homegrown,  
11 and that's what we're in the process of doing.  
12 And that's why market transformation is not going  
13 to happen in two weeks.

14 MR. CENICEROS: Charles?

15 MR. SEGERSTROM: Charles Segerstrom with  
16 PG&E. And I sort of hate to bring up a different  
17 topic because training is my business with PG&E at  
18 the energy training center in Stockton. I'm  
19 enjoying that quite a bit, and I couldn't agree  
20 more.

21 But there is a issue that I think may  
22 have major impact on existing housing. Because  
23 California, as a source energy state, we have not  
24 endorsed the national RESNET energy ratings system  
25 guidelines for regulations.

1           And as a result, that regulatory void  
2   has caused an only optional regulation of rating  
3   systems, such that there is no solid consistency  
4   between them.

5           There is, therefore, going to be a  
6   problem if there's more emphasis put on home  
7   energy rating systems in terms of credibility with  
8   lenders, energy efficient mortgage programs, and  
9   also from the federal government's standpoint the  
10   possibility of tax credits.

11           I know that during the energy crisis the  
12   phase two home energy rating systems regulatory  
13   process was put on the back burner. My suggestion  
14   would be that if a strategy for home energy  
15   ratings to become more prominent in retrofits in  
16   California -- in some partnership or whatever it  
17   takes to muster the resources -- I know Bruce  
18   mentioned this morning when Mike asked the  
19   question that, you know, there's only so much that  
20   can be done.

21           Well, if home energy ratings become the  
22   centerpiece of existing housing retrofits I think  
23   the state needs to finish phase two so that, just  
24   as was discussed with the branding as far as  
25   utilities and rebates, in terms of having a

1 regulation in place that's standardized for the  
2 state, it will bring more credibility for existing  
3 housing programs just as in the new construction  
4 arena the role for home energy rating systems for  
5 the verification of quality has turned into, at  
6 this point, greater than 3,500 verifications per  
7 month.

8 That's the kind of trajectory this sort  
9 of activity needs. And the credibility that goes  
10 with having an existing housing home energy rating  
11 in place will go a long way toward a jumpstart for  
12 this industry. Thanks.

13 MR. CENICEROS: Thanks, Charles.

14 MR. RIEDEL: Thanks, Charles.

15 MR. BEAMAN: Doug Beaman. I'd just like  
16 to second what Charles said. Don Carson, CHEERS  
17 employee, has left, but as a trainer for CHEERS  
18 and on the CHEERS board I would agree with  
19 everything that Charles said, I think that's going  
20 to be very important, particularly if there's  
21 ratings that are done as part of the outcome of  
22 this committee. Thank you.

23 MR. CENICEROS: Thank you, Doug. John?

24 MR. HOGAN: I want to make a more  
25 broader observation here. It seems it's valuable



1 to have a general philosophical discussion about  
2 how well these different types of incentive  
3 programs might work, and some details about them.

4 It seems desirable as a first step,  
5 though, to know what the potential energy savings  
6 are for various measures. If you know what those  
7 are then you can start to figure out what's the  
8 best way to deliver those, so I don't think we  
9 should be having this in the abstract, we should  
10 be deciding whether we're looking at envelope for  
11 residential buildings or mechanical for  
12 residential, or lighting for residential or the  
13 same for non-residential.

14 Conversely, though, hearing these  
15 comments, it seems that there are some  
16 observations being made that even if you  
17 identified sectors that had large energy savings,  
18 maybe there are problems in terms of how you might  
19 be able to reach those.

20 So maybe there are certain measures or  
21 potential that you would take off the table simply  
22 because you don't have a good delivery mechanism  
23 to reach them. So maybe you need to consider them  
24 both as you go forward here.

25 MR. CENICEROS: Yes. And as I pointed

1 out in the very beginning here, we are about to  
2 launch into the mandatory measure side, a look at  
3 strategies that we should consider for capturing  
4 some of this potential and we will follow that up  
5 with a look at strategies for voluntary strategies  
6 for the same.

7 They're just a little bit out of synch  
8 right now. So really we're just trying to get  
9 some ideas that maybe we haven't yet thought  
10 about, as HMG moves into that part of the study.  
11 But you're point is very well taken, John, that we  
12 need to look at what should be done first and then  
13 how to do it.

14 MR. RIEDEL: Let me toss one other  
15 thing. My perspective also in regards to "the  
16 market based approach." And I see it also not  
17 just as voluntary but as potential funded or  
18 incentive-based approaches for building market  
19 infrastructure, or other type of efforts that  
20 would help to stimulate or drive the market.

21 So I think what we're looking at is kind  
22 of a portfolio approach there, is that correct?

23 MR. CENICEROS: Yes.

24 MR. RIEDEL: Did I mis-characterize  
25 something?

1           MR. CENICEROS: No, I think that's a  
2 correct characterization. Tom, and then maybe  
3 about two other comments, and then we have to take  
4 a little bit of time for some general comments and  
5 observations.

6           MR. CONLON: Tom Conlon with Energy  
7 Checkup. I just wanted to underscore Charles's  
8 comments about HERS importance to having a  
9 standardized approach to HERS in California, and  
10 Doug's comments as well.

11           And I'm open to working with the  
12 Commission to open up the software and make  
13 whatever kinds of changes might be necessary to  
14 meet the needs here in California.

15           MR. CENICEROS: Thanks. Are there some  
16 more comments, especially someone who hasn't had  
17 the chance to talk yet? If there's something  
18 you'd like to say?

19           MR. CASENTINI: Dave Casentini, D&R  
20 International. It's just sort of a learning curve  
21 -- I've been in my position for three weeks. But  
22 I am representing EPA.

23           EPA's tool, the rating system, the  
24 benchmarking, there's a new portfolio manager that  
25 really is designed for sort of approaching

1 efficiency on the whole buildings approach, versus  
2 the end-use single equipment approach.

3           So this has been very informative for  
4 me, and I think as we look into this, and look  
5 into how do we incent people to build towards  
6 efficiency and also approach efficiency on the  
7 whole buildings approach, I look forward to  
8 participating and bringing in the energy star, not  
9 just the label but the process.

10           Again, the website and the tools that  
11 are available to industry, to end-use customers,  
12 and really using that as a platform to start  
13 looking at the performance of buildings.

14           And just to let everybody know that a  
15 lot of the discussion today was around the  
16 residential but there is a wide open area in terms  
17 of the commercial and industrial buildings for  
18 existing buildings as well as new construction  
19 around the Title 24.

20           So I appreciate the opportunity to be  
21 here and can serve as a resource as sort of being  
22 that face back to energy star and the energy star  
23 products.

24           Not just for the residential and  
25 appliance that people have mentioned, sort of the

1 labeling and the appliance improved efficiencies  
2 around that, but also in the commercial and  
3 industrial side as we start looking at, again,  
4 really changing the focus in that area from end-  
5 use equipment to sort of the whole building  
6 performance approach. Thanks.

7 MR. CENICEROS: Thanks. Elaine?

8 MS. HEBERT: Elaine Hebert with the  
9 Energy Commission. I've been tossing around a lot  
10 of thoughts today. Some of them relate to what  
11 John Hogan just said.

12 I'm more familiar with the residential  
13 sector than non-residential, and I know there's a  
14 huge diversity of neighborhoods in California,  
15 from the very affluent, where people are spending  
16 thousands of dollars a month on their energy  
17 bills, to the low income neighborhoods where there  
18 are probably absentee landlords who don't care  
19 what kind of shape the buildings are in, and don't  
20 care what the tenants are paying of even if PG&E  
21 or SMUD bill is existing.

22 Even if the systems are turned on, some  
23 people are just too poor to pay their energy  
24 bills. So we've got a huge diversity, and  
25 possibly one policy may not reach all of those.

1     So do you go to the place where you have the  
2     biggest bang for the buck, do you go for social  
3     justice issues?

4             You know, I'm sure all of this is going  
5     to enter into the discussion as the months go on.  
6     But one thing I was thinking is, maybe before we  
7     develop a policy, is maybe run some pilot programs  
8     in different communities where you find different  
9     communities or neighborhoods across the state and  
10    run a different pilot program in each and study  
11    how that works.

12            And, for example, no one has talked  
13    about doing energy audits in all buildings in a  
14    community, and is that a way to go. Look at all  
15    the buildings and how energy could be saved in  
16    each of them. There would be no trigger, it would  
17    just be every building would get looked at.

18            Or you'd have another community where  
19    you'd do just the triggers, where you look at what  
20    happens when the building is sold, or when there's  
21    a remodel, or whatever, and you run a pilot  
22    program that just deals with that. And I've made  
23    a list of that kind of thing.

24            Possibly one where you look at all the  
25    energy bills for that community or that town or

1     whatever and see if they make sense.  Are they  
2     within reasonable line or does it look like there  
3     could be some energy savings, and you target the  
4     ones that look like they're kind of out of line.

5             So there's a whole number of approaches  
6     and ideas that I have.  Anyway, I just thought I'd  
7     toss that out as a few thoughts.

8             MR. CENICEROS:  Thank you, Elaine.  And  
9     I do want to say we do anticipate that this  
10    portfolio that Randel referred to of  
11    recommendations will include some things that are  
12    ready for prime time, implementation right away,  
13    and other things that are going to need some pilot  
14    testing.

15            And the kind of approaches that Elaine  
16    mentioned there are good examples of that, I  
17    think, especially if we can test different ways of  
18    trying to accomplish the same thing opposite each  
19    other.

20            Okay, we're nearing 4:00 real fast.  At  
21    this point I'd like to open it up to any final  
22    summarizing or general comments about the AB 549  
23    project, things that you want to make us aware of  
24    at this point and consider as we go through the  
25    project.

1           We will be having more workshops and  
2   you're all invited to submit written comments or  
3   to call us up on the phone if you want to talk  
4   about specific strategies or ideas anywhere along  
5   the project.

6           Any general comments about the project?

7           MR. QUINN: Bruce? Patrick Quinn. I  
8   happen to live in one of the test sites in  
9   Pleasant Hill, California, and also in Mountain  
10   View, California.

11           And these two particular test sites were  
12   established as pilot programs as part of the  
13   housing allocation of small -- excuse me, the  
14   surface transportation program, as associated with  
15   ABAG and BART in the nine counties of northern  
16   California.

17           And these two particular mixed occupancy  
18   facilities have always been "out of code" from the  
19   day they were constructed and permitted. And we  
20   had enjoyed approximately one million dollars in  
21   lawsuits over the last 13, 14 years. And I have  
22   tried to resolve this problem with the respective  
23   lawyers that have allegedly represented us.

24           And nobody ever heard of algorithms, and  
25   I've been working with algorithms for the better



1 part of almost 40 years. And it seems like every  
2 good engineering program I've ever been involved  
3 in, we've always solved our control problems with  
4 various applicable algorithms.

5 And it's not exactly magic arithmetic,  
6 as the legal profession would lead you to believe.  
7 And every time I'd propose developing a local  
8 situation, for example with Sun Microsystems, and  
9 the thin clients, and the 8-i or the 9-i Oracle  
10 systems that are tied in with PG&E or SEMPRE or  
11 San Diego Gas & Electric, as we used to call them  
12 in the old days, or Southern California Gas,  
13 everybody looks at me with a jaundiced eye and say  
14 "what is he talking about?"

15 MR. CENICEROS: If I could interrupt.  
16 Could you relate this directly to --

17 MR. QUINN: Well, it gets back to what  
18 we just proposed, because now the state-of-the-art  
19 has come to that point in time where the reporting  
20 of servers to accomplish this particular set of  
21 conditions that would be ideal to resolve these  
22 kinds of problems, I can now purchase those  
23 particular servers either from Hewlitt-Packard or  
24 Agilant.

25 Test equipment to resolve those very

1 questions. So to respond to the suggestion that  
2 was just made here, it's a state-of-the-art that  
3 is available if somebody really seriously wants to  
4 sit down and do it on a pilot basis. I've  
5 proposed it for the last 21 years and it's been  
6 totally ignored. Thank you.

7 MR. CENICEROS: Thank you, Mr. Quinn.  
8 Okay, one last comment that somebody would like to  
9 make? Okay, great. We covered a lot of ground  
10 here and have received many really helpful  
11 suggestions from all of you. I really want to  
12 thank you for taking a day out of your schedule to  
13 give us this input.

14 Unfortunately, this is such a broad  
15 subject and there's just so much there, that we've  
16 just scratched the surface I believe. So I want  
17 to encourage you all to think about what we've  
18 discussed today, and to read the work products  
19 that we'll be posting on our website for the  
20 project over the next six months to two years.

21 And when you get ideas, send us e-mail,  
22 send us written comments, call us up on the phone,  
23 and continue to give us your good ideas. It's  
24 very helpful to spark our research and make sure  
25 we don't miss any good suggestions.

1           The next steps, basically, are that  
2   we're going to come out with an interim work  
3   product here that will lay out in more detail than  
4   we could present today the description of  
5   residential and non-residential markets in terms  
6   of trigger events and opportunities in those  
7   markets.

8           And then, on the regulatory side, it  
9   will start laying out some options for ways to  
10   capture that savings using regulatory mechanisms.  
11   Then, within a few months after that, we'll have a  
12   similar kind of product that will lay out  
13   voluntary strategies.

14           Not until we have both lists will we  
15   start to say what it is we should really be doing  
16   here. Again, we want to research that -- what are  
17   the problems, where are the gaps, the things that  
18   are not currently being addressed -- and then look  
19   at the best tools for capturing those savings and  
20   filling in those gaps.

21           And it may not be anything new, it may  
22   be just making the people who are responsible for  
23   the planning processes with the utility PGC  
24   programs or the appliance standards or the Title  
25   24 building standards aware of these problems that

1 need to be addressed, and making sure the problems  
2 are addressed in those processes.

3 Or maybe it may require expanded  
4 authority or new authority to do some completely  
5 new things. We'll just have to see where this  
6 leads. So, again, thank you for your attendance  
7 today, and please keep in touch and sign up for  
8 our e-mail list server so that we can let you know  
9 when the next steps will occur, and travel  
10 carefully going back home.

11 MR. RIEDEL: Thank you for your time and  
12 your participation.

13 MR. CENICEROS: A brief transcript of  
14 this meeting will be available on our web site  
15 probably in about seven to ten days.

16 (Whereupon, at 4:01, the hearing was adjourned.)  
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